12-1979

Grain TransportatIon Problems in Nebraska -- Causes and Cures. Proceedings of the Nebraska Grain Transportation Seminar

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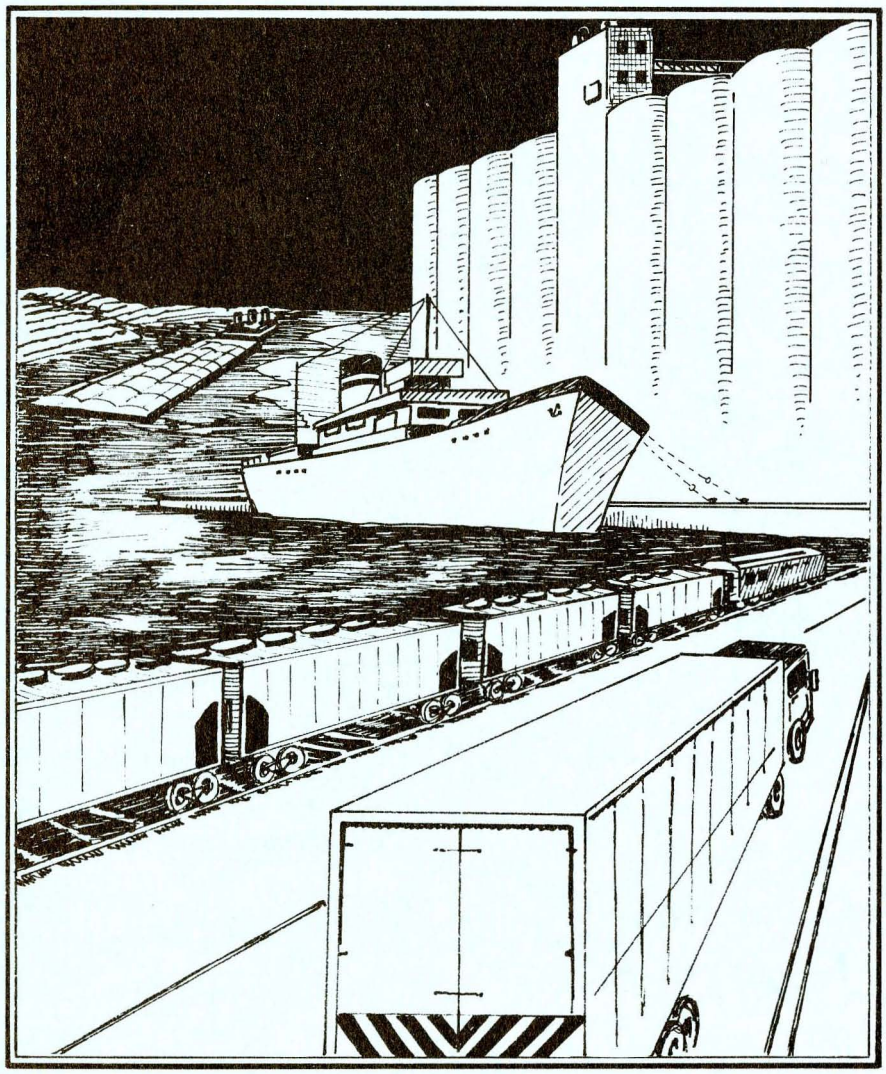

Proceedings of the Nebraska Grain Transportation Seminar

Sponsored by the Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln, Lincoln, Nebraska. December 12, 1979

Grain Transportation Problems in Nebraska -- Causes and Cures

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The Institute of Agriculture
and Natural Resources

University of Nebraska-Lincoln

Lincoln, Nebraska

December 12, 1979

PREFACE

The Nebraska feed grain and soybean harvest of 1979 was one which will not soon be forgotten by those who participated in its production and marketing. Yields and production broke all previous records. Record export demands for the crop placed record service requirements on transportation and handling systems. Record movements of grain from farms to elevators and to inland and export terminals were reported. At the same time, complaints of inadequate capacity to store and transport the grain were perhaps also of all-time record proportions. Corn and milo accumulated in open piles on farms and at country collection points. Problems in accommodating peak flows of grain are not new, but the severity of the problems in the fall and early winter of 1979 may have been particularly great.

Recognition of the problem and of the wide differences in perception of its causes and possible solution prompted the organization of a "Nebraska Grain Transportation Seminar," which was held in Lincoln on December 12, 1979. Invitations to attend the seminar were sent to persons with acknowledged interest and expertise in grain transport issues. Program participants were chosen for their expertise and divergent viewpoints. The planning committee for the seminar consisted of:

Dr. Howard Ottoson
Mr. Ross Rasmussen
Dr. Dale Anderson
Dr. Dean Linsenmeyer
Dr. William Splinter
Dr. Mike Turner
Dr. Glen Vollmar

Not included in this proceedings are the welcome remarks by Vice Chancellor Martin Massengale nor the extemporaneous comments of a reaction panel moderated by Mr. Bob Bishop and manned by Mr. Dominick Costello, Dr. Richard Felton, Mr. Keith Lundberg, Mr. Ralph Raikes and Senator Loran Schmit.

Dale G. Anderson
Dean Linsenmeyer
Michael S. Turner
Editors

Perspectives Regarding Nebraska's Grain Transportation Industry

by

Dr. Dean Linsenmeyer
Assistant Professor
Department of Agricultural Economics
University of Nebraska-Lincoln

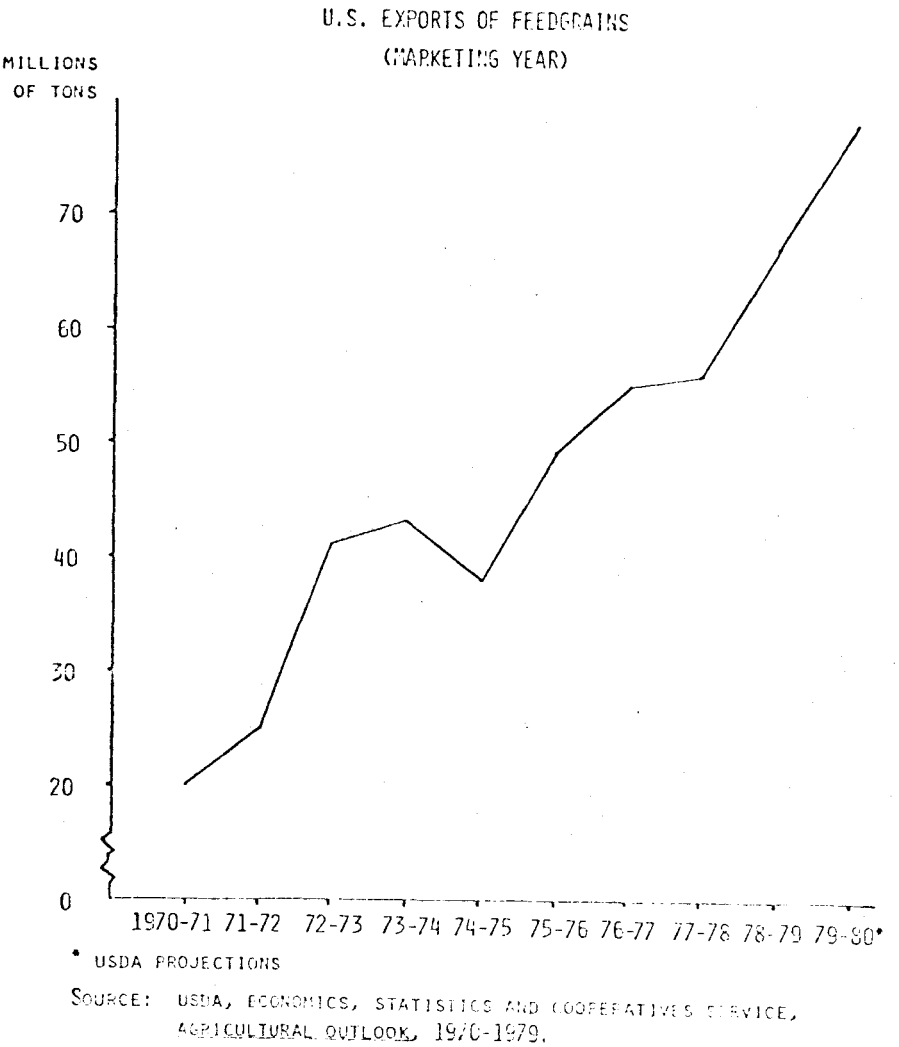
Good Afternoon! In the time which we have together this afternoon, I would like to examine some of the forces, both nationally and locally, which have influenced Nebraska's grain transportation industry in the last decade. We will also attempt to examine some of the current adjustments taking place in the grain transportation industry as a result of those forces.

By late 1950's and throughout the 1960's, grain production in the U.S. was characterized by government supply controls on the production side and on the marketing side by the government's C.C.C. storage sites scattered throughout the midwest. Livestock feeders and the domestic milling/processing industry provided the other major immediate market for Nebraska grains. The transportation requirements of all three of these markets were for relatively small-sized shipments to numerous scattered destinations located in relatively close proximity to the producing areas.

The shift from a predominately domestic market to the international export market for U.S. grains in the early 1970's and the tremendous increase in U.S. grain export volumes during the 1970's is exemplified here by U.S. feedgrain data.

Beginning with slightly over 20 million tons in 1970/71, U.S. feedgrain exports grew to over 3 times that volume in the next nine years.

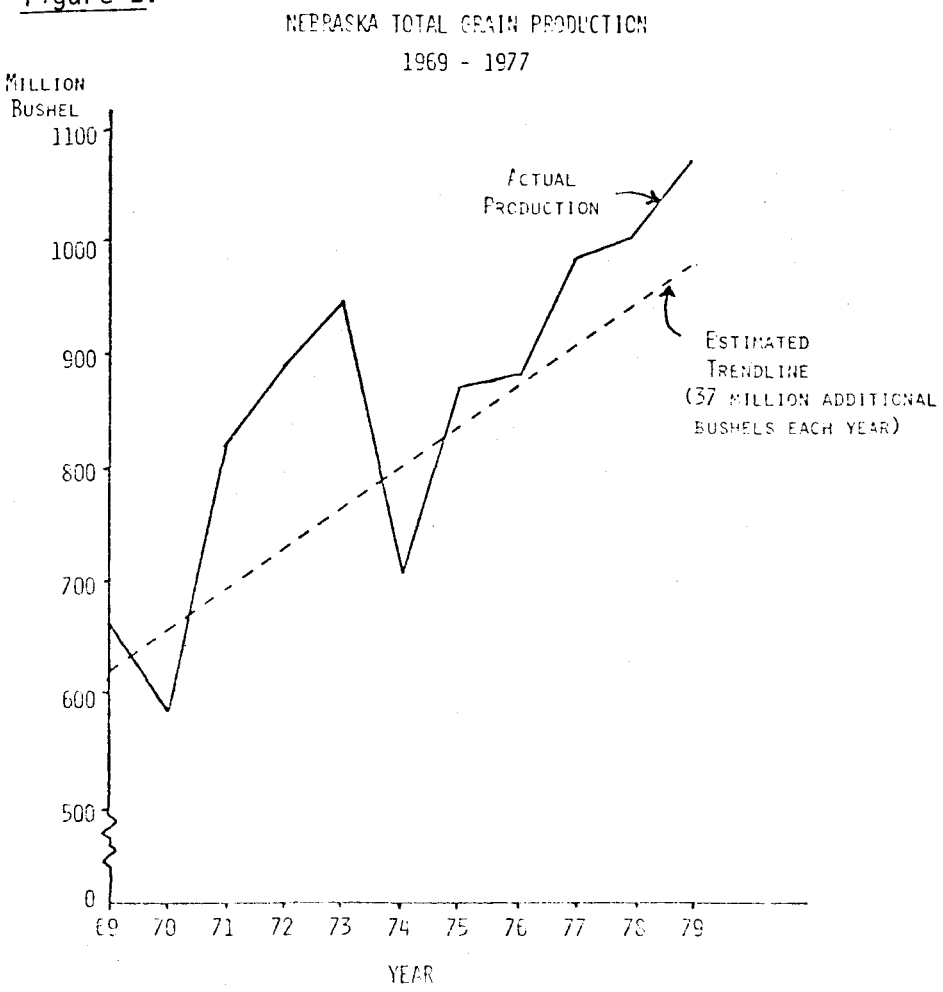
Figure 1.



Needless to say the shift toward the export market precipitated tremendous changes in the grain transportation industry. First of all, higher world prices and the potential for increased sales, provided the necessary incentive for Nebraska producers. On average, over the last 10 years, Nebraska producers have supplied an additional 37 million bushels of feedgrains, foodgrains and oilseeds each year.

Given the fact that livestock animal units and domestic human consumption has remained relatively constant over this same period, a major

Figure 2.



SOURCE: COMPUTED FROM NEBRASKA CROP AND LIVESTOCK REPORTING SERVICE, NEBRASKA AGRICULTURAL STATISTICS, 1969 - 79.

portion of this increased production has to be transported longer distances to export terminals. In total, about 40 percent of all wheat shipments, 56 percent of all corn shipments, 49 percent of all grain sorghum shipments and 34 percent of all soybean shipments leaving Nebraska elevators in 1977 were destined directly for out-of-state destinations.

Secondly, the size of the export sales contract and the capacity of the ocean vessels involved, facilitated large volume shipments to a single port destination at one time; a sharp contrast to the transportation needs

of the domestic markets in the 1960's. These two factors, an increase in total volumes handled and an increase in shipment size to a single destination, have had far reaching impacts on producer, local shipper, carriers of all transportation modes as well as port terminal facilities.

Let us begin by tracing those ramification through the railroad industry to other participants in the entire system. Railroads were now able to take advantage of the efficiencies in operation by shipping 25, 50, and 75 car unit trains from single originating elevators to port terminals.

The savings in expenses and time involved in the central yards for switching, humping, and regrouping trains was sizeable. This resulted in the Union Pacific offering shippers reduced "incentive" rates on 25, 50, and 75 car shipments of feedgrains, soybeans, and now wheat to west coast destinations. In addition both the Burlington Northern and the Union Pacific were able to provide better turn around time on multi-car shipments. In the case of west coast shipments, turn around time was frequently cut to 15 days.

The economic benefits for the shipper who can take advantage of the train load rates has and is continuing to alter the structure of Nebraska's grain industry. The alternative facing the single shipper who attempts to adapt to unit train shipments are either (1) upgrade his current facilities or (2) build a new facility entirely. The following table illustrates the magnitude of these structural changes as estimated by the U.S. Environmental Protection Agency. In Iowa, Illinois and many of the major grain belt states the traditional single car country elevator is being upgraded to subterminal size which in turn ships directly to port terminals bypassing the traditional inland terminal.

Table 1. Composition of U.S. Grain Elevator Facilities 1974-1980

Elevator Type	1974	Estimated Number 1980	Number Change	Percent Change
Traditional Country	6,480	4,625	-1,855	- 29
Upgraded Country (25 car)	90	305	+ 215	+ 239
Upgraded Country (50-100 car)	60	200	+ 140	+ 233
High Throughput Terminals	45	150	+ 105	+ 233
Traditional Inland Terminals	390	335	- 55	- 14
Traditional Port Terminals	65	70	+ 5	+ 8
Totals	7,130	5,685	-1,445	

Source: U.S. Environmental Protection Agency, Standard Support and Environmental Impact Statement, Vol. 1: Proposed Standards of Performance for Grain Elevator Industry, January, 1977, Table 6-3, pp. 6-12.

The magnitude of such changes for Nebraska depend on several factors. First of all, both upgrading and/or new construction require an increase in working capital and a tremendous fixed capital investment depending on the extent of remodeling necessary. This in turn places new demands on Nebraska's financial institutions. Trackage at $35 to $40 per foot needs at a minimum to be twice the length of the unit train being shipped. Additional investments could include a trackmobile at $40,000, at least two switchers at approximately $36,000 each and possibly an additional concrete annex at $2 per bushel over for a minimum of 500,000 bushel of storage assuming a 52 car train.

In order to be economical, such a high fixed investment would need to be spread over a larger volume throughput. Assuming a 52 car train, made of 3,400 bushel hopper cars with two turn arounds per month, a single elevator would need to have a trade territory capable of assembling nearly 4.5 million bushels annually. While this may be possible in high production, irrigated areas, the required trade territory would be expanded considerably

in dryland areas of Nebraska.

The increased number of such sub-terminal unit train facilities has precipitated in turn an increased demand for truck transportation on the short haul. Direct producer or country elevator delivery to sub-terminal unit facilities has increased the investment in motor carriers.

An alternative to this single origin unit train shipment is the shuttle train concept. A series of shippers on a single line would coordinate shipments to a single destination. The unit train would be split among the shippers in a given locale and then reassembled for unit shipment to the port terminal. While this alternative would involve some additional expenses on the part of the railroads, and a need for closer coordination of the merchandizing operation by elevator managers, it would greatly reduce the fixed investment requirements and the need to consolidate trading areas through a single facility.

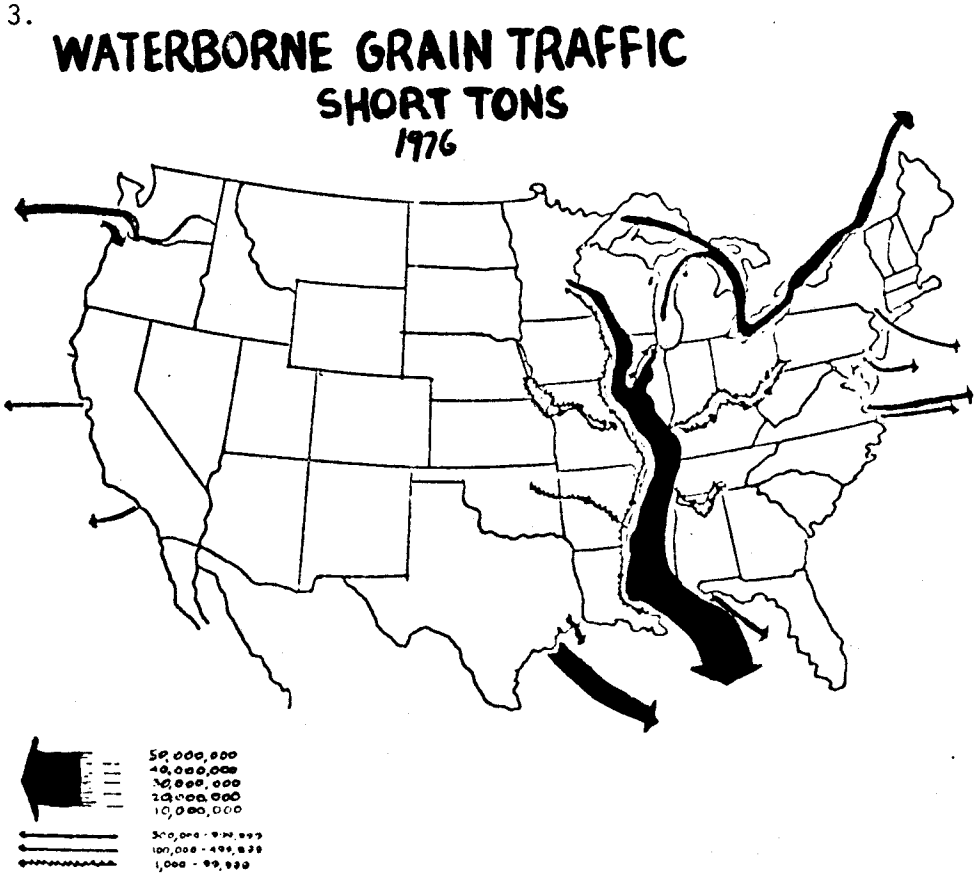
A separate issue, yet interrelated with the unit-train adjustment is that of limited rail car supply. Stemming from the absolute increase in grain volumes being handled and the longer distant shipments, the access to rail cars is probably more vitally impacting the grain trade than any other issue at this time. Local shippers facing ever increasing production levels and limited access to rail cars are responding in several ways: (1) by resorting to truck movements of grain over longer hauls thereby increasing at least seasonally the demand for motor carrier services. This higher cost alternative may be reflected in lower bid prices to farmers. (2) By increasing the elevator's investment in rail cars. A 5-year lease for covered hopper cars costs shippers approximately $500/car/month. These lease costs can be recovered in several ways. Burlington Northern and Union Pacific provides a refund to the shipper of 24¢ per loaded car mile for single cars supplied by the shipper. In addition,

B.N. and U.P. allocate many of their limited available cars through matching equipment agreements. Twenty-six shipper-supplied cars will be matched with twenty-six B.N. cars creating a 52 car unit train. Union Pacific offers shippers a rate reduction of 9¢, 10¢ and 11¢ per hundredweight for 25, 50 and 75 shipper-supplied cars respectively. Provided the 15 day turn around time is achieved, the monthly lease costs can be recovered.

In this 1979 post-harvest period, access to rail cars was so critical that car availability, not necessarily competitive grain pricing determined the timing and destination of grain sales.

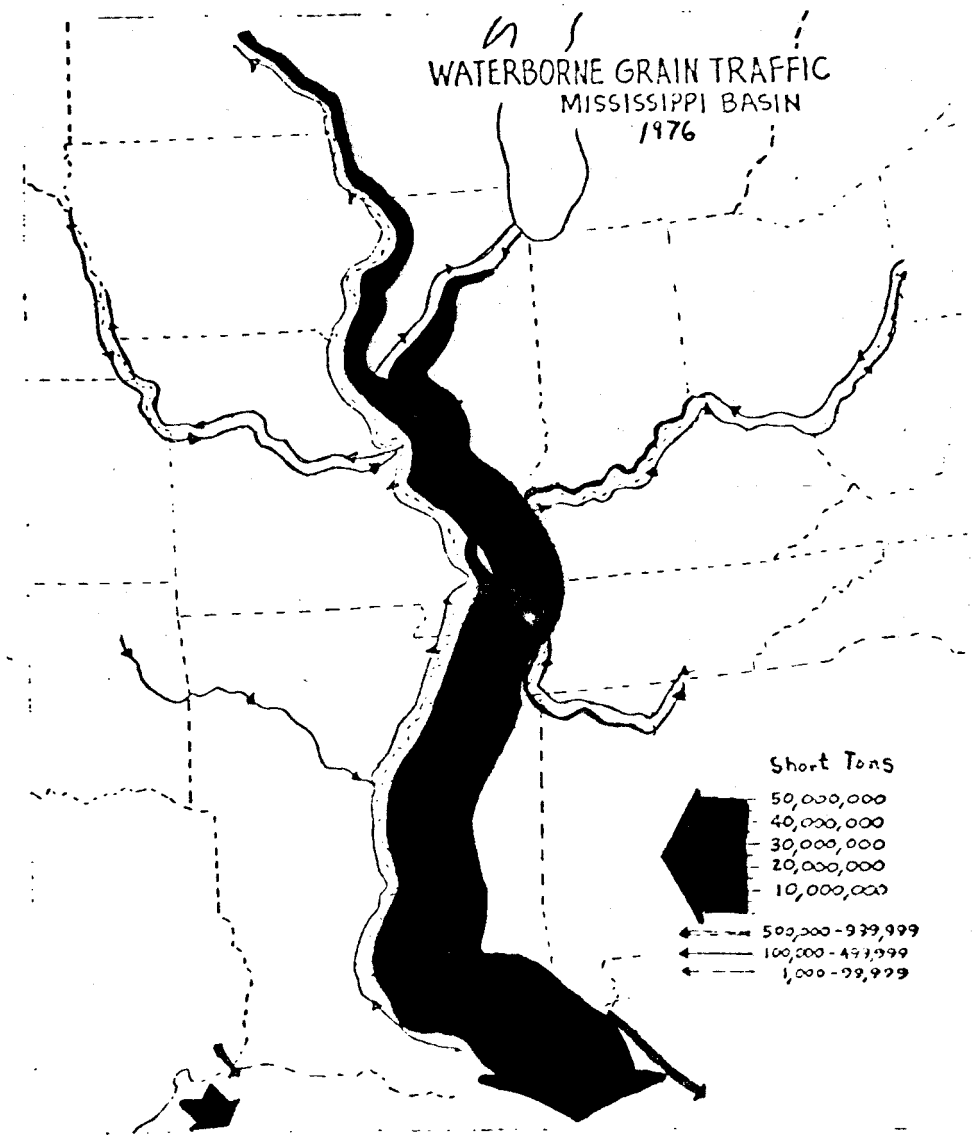
Elevators faced with grain on the ground were willing to pay a premium just to have access to the cars. The destination of sales was determined by which terminal buyer had cars available for transport. The amount of the premium varied with a maximum determined by the cost of the next-best alternative available to the inland shipper, that being trucking.

Figure 3.



Barge shipments also reflect the growing demand for grain transportation. The U.S. possesses 25,000 miles of navigable waterways which plays in total an important role in grain movement. Approximately 1500 tons of grain can be carried per barge; with as many as 25 to 30 barges being tied together and towed by a single tugboat on the Mississippi. However Nebraska shipments originating on the Missouri face a quite different picture largely due to the nature of the river itself. The shallow 8 feet channel depth limits loading to only 90 percent of capacity on many barges. In spite of a

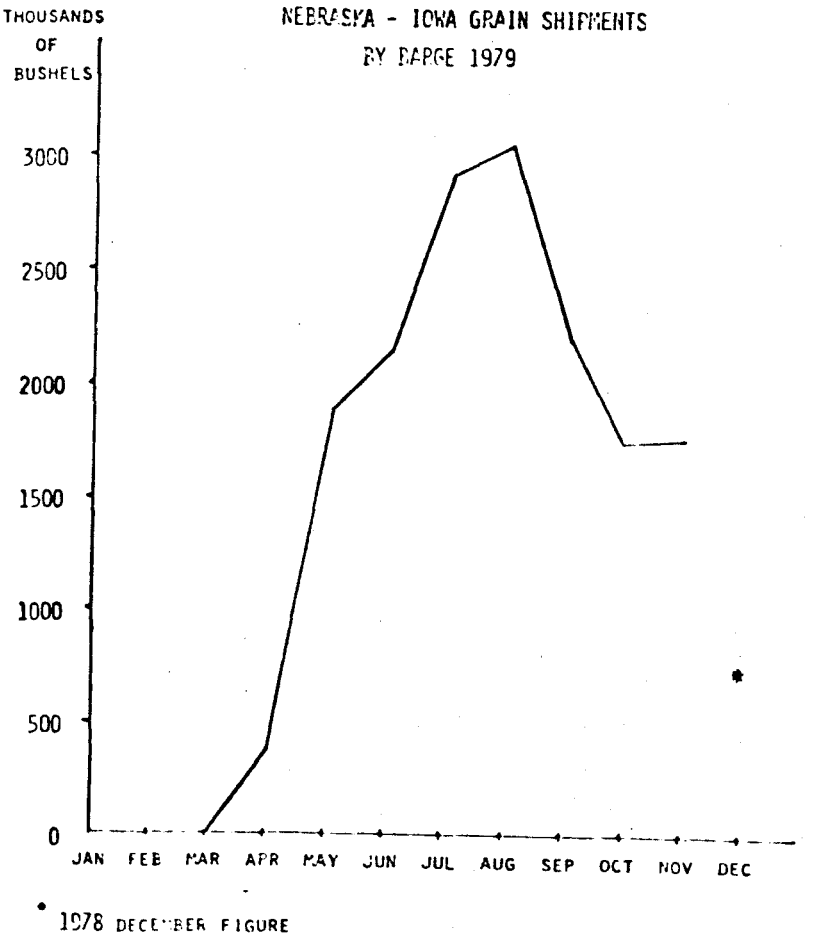
Figure 4.



sizeable public investment in channel improvements, the sharp bends and fast current restrict the number of barges per tow to only 2 to 9 depending on the location. The private barge or tugboat operators generate revenue on a ton/mile basis.

Therefore, given the Mississippi as an alternative route, the larger tows of heavier barges mean a greater economic incentive to allocate his fleet to the Mississippi instead of the Missouri. Income can be earned on a year round basis by keeping his barges moving on the lower Mississippi whereas the Missouri is frozen approximately four months per year.

Figure 5.

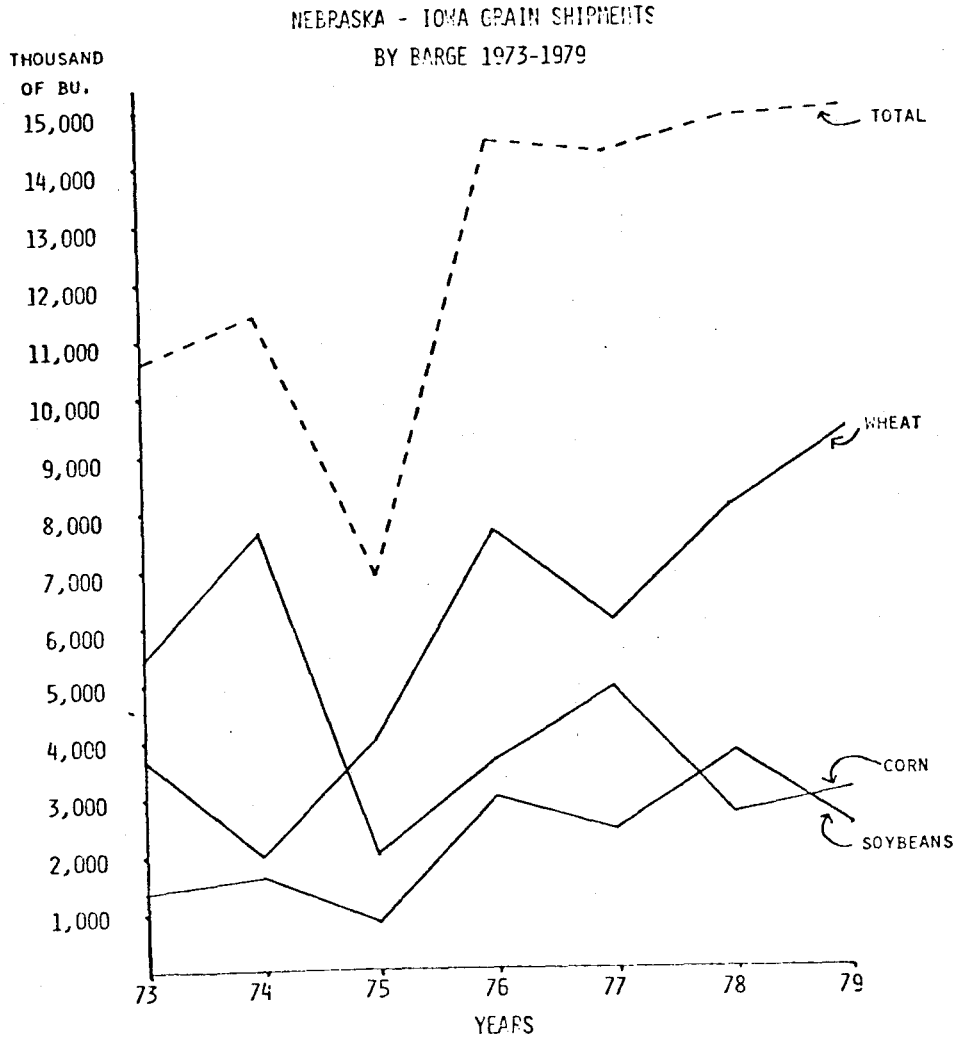


SOURCE; USDA, AGRICUTLURAL MARKETING SERVICE, GRAIN MARKETING NEWS, JAN-NOV 1979.

The seasonality grain shipments originating from river terminals on the Nebraska-Iowa portion of the Missouri in 1979 show that the June through September period is the peak in barge traffic. (Figure 5)

The competition between barges and other modes of transportation especially rail, also impact the long term outlook for barge traffic. Although Nebraska barge shipments have increased over the last seven years, some interesting trends appear as we examine individual commodities.

Figure 6.



SOURCE: USDA, AGRICULTURAL MARKETING SERVICE, GRAIN MARKET NEWS, 1973-79.

Wheat which is primarily produced in the western 2/3 of the state moves east by truck and rail and the south by barge. In contrast, corn, produced in the eastern 2/3 of the state shows a declining use of barge facilities. On the average approximately 500,000 fewer bushels of corn moved by barge each year. Several factors have influenced these differing trends. First of all, relative market demand for U.S. exported grains has shifted more heavily toward the Asian market. In combination, ocean freight rates for shipments to Japan for 50,000 ton vessels has risen to $20-25 per ton, nearly double the rate a year ago. This has decreased the advantage of Gulf sales with movement through the Panama Canal and increased the advantage of rail shipments to the west coast. Also, contributing to this trend is the attractive unit train rates for corn and soybeans to the west coast. With the newly initiated unit train rates for west coast wheat shipments, one would expect wheat flows in the future to follow the pattern of feedgrains and move increasingly westward by rail.

The last factor impacting the movement of Nebraska grains which I would like to consider today is that of port capacity. The local shipper evaluated his break even point on car leasing arrangements based on a 15 day turn around. That turn around time has frequently been lengthened due to operations at the port facility. Port terminal capacities can be a major bottleneck in U.S. export sales. One only has to examine the Canadian situation to realize that millions of dollars of foreign wheat contracts have been forgone by Canada, not due to inadequate supplies but rather the inability to deliver and move grain efficiently to and through port terminals.

The U.S. port terminals have had to respond in several ways. First-of-all by increasing total handling capacity to match the increased export

Table 2. U.S. Grain Exports - 1976 by Port.

Port Location	Annual Total (Million Bu.)	% of Total	Percent of Commodity Total				
			Corn	Wheat	Soybeans	Sorghum	Other
New Orleans, LA	1,514,749	47	59	18	70		12
Houston, Texas	264,465	8	4	20	2	10	
Portland, Oregon	257,201	8		26			29
Baltimore, Maryland	206,187	6	9	3	6		
Norfolk, Virginia	190,308	6	10	< 1	5		
Duluth-Superior, MN	151,024	5	1	11			54
Corpus Christi, TX	129,165	4		5		87	
Toledo, Ohio	121,845	4	4	1	8		3
Philadelphia, PA	85,742	3	3	2	2		
Beaumont, Texas	81,568	3	2	4	2		

volume. Secondly, by shifting the location of new terminal investments to west coast locations, Portland, Seattle, Long Beach, San Francisco, San Diego and others in response to the Asian market. In 1976, terminal elevator in the New Orleans area handled 47 percent of all U.S. grain exports; 60% of all corn and 70% of all wheat exports moved through that single port area. That degree of concentration helps to explain why port congestion and port embargoes were frequent occurrences facing gulf shippers. As the level of grain exports increased on the one hand and ocean vessels slowed down to conserve diesel fuel on the other, port congestion on the west coast, as well as Gulf, and Great Lakes slowed the movement of U.S. grains.

In summary, several issues face the grain transportation industry which we would do well to understand and address as decision makers and researchers at all levels, both in the industry, in government and in the University.

(1) The changing structure of the grain industry itself whether that be by the construction of sub-terminal facilities handling unit train shipments or the coordination or merchandising decisions by elevator managers to facilitate shuttle train movement.

(2) The changing purchasing patterns emerging in the farm level bidding for Nebraska grains as a result of the changing structure.

(3) The increased reliance on motor carriers to move grains over longer distances.

(4) The limitations of and future role for the Missouri river as a means of transporting grains to market.

I trust that a better understanding and appreciation for the constraints faced by all participants in the grain marketing channel will guide our policy and research decisions as we examine all possible alternatives in improving the efficiency and adequacy of the grain transportation system serving Nebraska.

Barge Transportation and Nebraska

by

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Corps of Engineers
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This paper will include a discussion of the historical and current utilization of the Missouri River for the transport of commodities to their ultimate destination, a discussion of current issues relating to the Missouri River Bank Stabilization and Navigation Project and a perspective of future Missouri River navigation.

Missouri River Bank Stabilization and Navigation Project

The current project was authorized by the River and Harbor Act of 1945 in accordance with House Document 214, 76th Congress, 1st Session, 1939. This authorization provides for a continuous 9-foot navigation channel 300 foot wide from Sioux City, Iowa, to the mouth of the Missouri River at the confluence with the Mississippi River at St. Louis, Missouri. The Act extended navigation limits and modified earlier Congressional authorizations of 1912 and 1927 that provided for six-foot depth and a 200-foot wide navigation channel.

Construction on the dike and revetment works will be completed during 1982. The current construction effort is quite small consisting of the placement of rock in the development of dikes with environmental notches, and bank placement for stabilization purposes.

Operation and maintenance budgetary requests for the Missouri River Bank Stabilization and Navigation Project have declined somewhat during the past five years. More importantly, actual expenditures have declined significantly.

Operation and maintenance expenditures for the year ended 30 September 1979 were $7.5 million. A detailed analysis of operation and maintenance expenditure components for the period 1971 through 1975 concluded that about 51 percent of these expenditures were attributable to the navigation project while 49 percent were functionally serving bank stabilization. It appears that operation and maintenance expenditures should level off to $7-8 million annually, possibly somewhat less. With commercial commodity movements of about 3.3 million tons annually, this would suggest an annual operation and maintenance cost for navigation of $1.15 per ton moved on the Missouri River.

Commercial Navigation on the Missouri River

The movement of commercial navigation tonnage on the Missouri River reached a peak of 3.3 million tons in 1977 as reported in the Waterborne Commerce Statistics, and summarized in Table 1. The principal commodity movements were grain, approximating 37 percent of the commercial tonnage. Because of the existing commodity markets and alternative mode rate structures, nearly 74 percent of the grain moved on the river (over 900,000 tons) in 1977 was wheat. Food and kindred products, including molasses, tallow, prepared animal feeds and grain mill products, encompassed over 22 percent of the total commercial tonnage or about 740,000 tons. Fertilizer represented over 14 percent of the commodity movements or nearly 480,000 tons. These three commodity groups, which include agricultural or agriculturally related commodities compose nearly 75 percent of the total commercial tonnage movements on the Missouri River.

Table 1. Commerical Navigation Tonnage Missouri River for 1977 Waterborne Commerce Statistics*

COMMODITY	TONNAGE 1,000's	PERCENT
Grains	1,229.3	36.9
Corn	(165.0)	(4.9)
Wheat	(908.2)	(27.2)
Soybeans	(132.6)	(4.0)
Sorghum	(8.0)	(0.2)
Salt	144.3	4.3
Food & Kindred Products	739.4	22.2
Molasses	(179.5)	(5.4)
Pulp & Paper	6.1	0.2
Chemicals	538.0	16.1
Fertilizer	(478.1)	(14.3)
Petroleum	435.9	13.1
Stone, Clay, & Glass	148.3	4.4
Primary Metals	77.5	2.3
Other	17.0	.5
	3,335.8 Tons	100.0 %

*( ) Represent data for some of the more significant commodities of principal commodity grouping aggregate data presented above.

Nebraska Commodity Movements

The data collection efforts of navigation movements are limited to origin and destination of the transportation function, e.g., river point to river point. Such data are not then conducive to quantifying state of production disaggregation. However, the extensive elevator interview effort accomplished by Dr. Linsenmeyer has provided these data in a very effective manner. Dr. Linsenmeyer's effort is a very significant contribution to the understanding of grain marketing and modal choice for Nebraska agriculture. Docks and terminals of significance to Nebraska grain producers are located at Sioux City, Iowa, Blair, Nebraska, Omaha-Council Bluffs, Rock Bluff, Nebraska, Nebraska City, Nebraska, and Brownville, Nebraska.

The Future Transportation Choice

Commercial navigation tonnage growth on the Missouri River has been quite slow, averaging about 100,000 tons per year. In a current study effort, we have conducted extensive interviews with Missouri River terminal operators, shippers, and towing companies. Concerns expressed by the current users included shallow draft resulting in light loading of barges, rapid currents, stage fluctuations, 8-month season limitation, channel restrictions limiting tow size, inadequate buoy placement, and equipment shortages. Some of these concerns are being lessened by improved conditions. Water depths in most of the Missouri River range from 10-13 feet, with selective restrictive areas below Kansas City which serve to constrain the depth of loadings. These areas, however, can be eliminated by selective dredging, timely definition of channel movements, and marking new channels. The average depth of loading during 1978 was nearly eight feet with average loading of 1280 tons per barge. Although loading depth data are

not yet available for 1979, loadings have increased nearly five percent to 1340 tons per barge. Existing channel restrictions exert tow size limitations of three barges from Sioux City to Omaha; six barges to Kansas City; and nine barges per tow in the lower river. Selective marketing characteristics and logistics of equipment availability further limit tow size in practice. In 1978 average tow size above Rulo was over 4.2 barges per tow while tow size below Kansas City was nearly 7.2 barges per tow.

An additional effort in the analysis of the performance of the navigation function of the Missouri River Bank Stabilization and Navigation Project involves estimating the transportation cost differential between rail and barge. Initially transportation rates were acquired by contract with the Tennessee Valley Authority Rate Section. The magnitude of transportation savings and volume for grain movements on the river is dependent upon the availability of rail unit train rates. Such rates are readily available for corn and soybeans resulting in limited water movements of these commodities, with river terminals serving a country point collection function. Resulting transportation savings are estimated at about 9 cents per bushel or over $3 per ton. Transportation savings for the movement of corn is estimated at about 9.5 cents per bushel or about $3.50 per ton. Although rate differentials for wheat movements are much more significant than corn and soybeans, adjustments for differential costs from producing area to river terminal reduce the potential transportation savings to less than two dollars per ton. The complexity of this adjustment will require further refinement to provide a firm estimate of transportation savings. Substantial savings accrue to other commodities moved on the river resulting in a very preliminary estimate of average rate savings per ton of more than nine dollars. It is quite likely that further adjustments for commodity marketing

characteristics of collection and distribution will result in a downward revision of the $9 estimate. This adjustment, however, should represent a refinement of the data, and not call for significant adjustment.

Missouri River Navigation Projections

Initial estimates for ultimate Missouri River Navigation tonnage were set forth in a 1950 report, suggesting movement of one-million tons at the time of project completion and reaching five million tons 20 years after completion. Two recent study efforts have provided estimates of future commodity flows on the Missouri River. The Mid-America Port Study, conducted by the Maritime Administration and 17 states, provides an assessment of historical traffic movements and terminal facilities, and projects future traffic movements and terminal investment needs by state. Water movements of Nebraska grain were estimated to increase from 260 thousand tons in 1976 to 335 thousand to 500 thousand tons by the year 2000 for the low scenario forecast and the high scenario forecast, respectively. Terminal and associated facilities were deemed to be generally adequate for anticipated modest growth in river movements, with possible increased investment of $1 million.

The second effort attempting to project commodity flows is being accomplished by Data Resources, Inc., a participating contractor in the Corps of Engineers National Waterways Study. This analysis provides modal share projections through 2000 for the Missouri River from a base year of 1975 movements. These preliminary estimates suggest year 2000 waterway movements of 4.5 to over 5.5 million tons. Due to the aggregate nature of the projections some anomalies exist on selective commodities, e.g., slow but steady growth in the movement of grain is projected at 1.7 million tons in the year 2000 (low tonnage estimates) while 1978 estimated tonnage of grain movements

was 1.6 million tons. Alternatively, current grain commodity movements exceed the 1995 low scenario projected movements. An attempt is currently underway to ascertain that the commodity projections have some semblance of reasonableness.

Summary

Missouri River navigation activities principally serve agriculture. Not only are nearly 75 percent of the commodities agriculturally related, but the waterway modal competition enhances agriculture's transportation bargaining power with competing modes. The Missouri River will continue to play a role in transporting agricultural commodities to the Gulf Coast for export and providing agricultural production inputs at very economical transportation costs. Because of the nature of Missouri River navigation, its future rate will likely evolve through external forces such as structural changes in the grain marketing collection and transporting system as productivity intensity and volume increase; waterway system equipment allocation within the industry to the most profitable river segments given the current limitations of capital and equipment availability; and in response to changing rail rate structures and rail car shortages as the West Coast export industry develops.

Industry has been loading to greater depths, but the channel has 10-13 foot depth. Studies should be completed in a couple of months analyzing recent historical channel dimension growth. A conservative estimate of the project capacity is 12 million tons, while current use is 3.0 to 3.3 million tons. Navigation users must strive to make better use of this great resource.

Outlook for Movement of Nebraska's Grain for Export

by

Stanley M. Smith
Cargill, Inc.
Minneapolis, Minnesota

The 1970's have truly been a dynamic decade of growth in U.S. grain exports. The ever resourceful U.S. farmer and our free market transportation and marketing system have adapted to an export demand that has tripled since 1970 in terms of tonnage and more than quadrupled in terms of dollar earnings. Using a July-June year we have seen U.S. grain exports expand from about 1.8 billion bushels in 1970-71 to 5.4 billion bushels as projected by the USDA for the 1979-80 marketing year.

While such a tremendous increase in demand for transportation and port facilities has resulted in isolated and periodic bottlenecks, it must be recognized that our export logistical system has consistently continued to expand to move larger quantities of grain through export terminals each year in a remarkably successful manner.

The tripling of U.S. grain exports during the 1970's is an even greater testimony to the accomplishments of a free market system when compared to the stagnation of Canadian exports during the same period - the latter resulting from excessive regulation and rigidity of all facets of the Canadian grain industry.

The great cornhusker state has been blessed with the opportunity to take advantage of this increasing export demand, and the producer and those industries serving him have very effectively responded to

that opportunity. We have seen Nebraska annual grain production expand from an average of 680 million bushels in the 1970-74 period to over 1 billion bushels in 1979 for an increase approaching 50 percent. Since less than 300 million bushels of this production is consumed within the state, Nebraska is in the enviable position of having over 700 million bushels available for export out of state. With domestic demand unlikely to expand more than 2.8 to 3 percent annually, this state will be looking to the export market to absorb a greater percentage of its production.

Let us now address the make-up of U.S. grain exports and see how Nebraska most effectively fits into the picture. It is expected the world will become more and more dependent upon the U.S. to supply feed and food stuffs and further that the Asian market will account for an increasing share of this demand. Recent developments in feed grain exports from the West Coast are indicative of the significant increase in demand from Far East. Corn and sorghum exports from the West Coast have gone from 3.5 million bushels in the 1975-76 crop year to no less than 225 million bushels in the October 1978-September 1979 marketing year. The West Coast feed grain exports will continue to expand and Nebraska will be called upon to meet this growing demand.

The primary reason for most of the increased Asian feed grain demand being served ex the West Coast rather than the gulf is a function of ocean freight economics. Steaming time from the West Coast to Japan is 14 days vs. 30 days ex the Gulf. With the escalating fuel and interest costs the advantages of the shorter voyage are obvious. The past few months have seen absolute freight differentials of

between 5 and 7 dollars per ton in favor of the West Coast to Japan. Taking into account the ominous fact of inflation, the freight spread is likely to widen in the future.

The major means of moving Nebraska's export grain to the seaboard are barge and rail. Though our inland waterways have provided and will continue to provide a considerable amount of transportation for export grain, they are operating under a number of physical constraints, the most serious being Lock and Dam 26 which has reached its maximum operating potential and is awaiting an 8 to 10 year renovation to expand its capacity.

As far as the Missouri River is concerned, the others on this panel are much better qualified than I to address the technical as well as economic ramifications of barge grain movement. However, it is my impression that economies and efficiencies in barge grain movement off the Missouri River are difficult to attain due to draft limitations, small sizes of tows, relatively high amount of power required per unit of cargo in this swift, winding, shallow waterway. There would seem to be a lack of incentive for capital to flow into the Missouri River barge business, although increased production immediately tributary to the river could create some additional demand for barge freight.

Therefore the railroads will be called upon to carry an ever increasing amount of Nebraska grain to the Seaboard export facilities and we have every reason to be confident that they will meet that call. Through various efficiencies and innovations the railroad

industry has very effectively met the needs of the grain economy. Weekly car loadings of grain are currently running 3,000 to 5,000 units over a year ago - call it an increase of 11 to 17 percent, depending upon the week.

Overall, the U.S. has adequate seaboard export facilities. The large October and November 1979 exports of 466 million and 490-500 million and even last week's record exports of 131 million bushels are no indication that exporting facilities were used to their maximum capacity. It is difficult, if not impossible, to accurately estimate maximum annual export capacity. Suffice it to say that in a free economy, export facilities will expand if and when economics of demand so dictate.

In conclusion one has to be optimistic on the future of Nebraska grain business. Reasons for this conclusion can be summarized as follows:

1. Outlook for expansion of U.S. exports.
2. Prospects for increased percentage of U.S. feed grain exports moving to Asia via the West Coast.
3. Nebraska being the most important state in terms of feed grain production tributary to the West Coast.
4. Proven ability on the part of the railroads to move Nebraska's grain for export.
5. Adequate capacity at seaboard grain facilities to handle the demand.

The Missouri River

A Highway to Economic Growth

by

John R. McKenzie
SCNO Barge Lines, Inc.
Omaha, Nebraska

I appreciate this opportunity to be present today and to participate in this Missouri River Transportation Seminar.

We know from our school days that the early development of our country followed the banks of our river system. The first traders and pioneers in exploring our Inland Rivers, men such as Lewis, Clark and Joliet, led the migration of the first settlers to areas we know today as urban centers.

Consequently, the rivers then became the transportation and communication links between communities. The communities flourished, and commerce on the rivers also flourished.

Most of our great centers of population, of industrial production and commercial distribution, and our centers of culture owe their origins and their initial growth to commerce on the Inland Rivers. And today they still depend on the rivers for a great measure of their prosperity.

Thirty-eight of the fifty states have commercial transportation services provided by the vessels operating on rivers, canals, bays, sounds or lakes. One hundred thirty-one of the one hundred fifty cities having a population of 100,000 or more are located on commercial navigation channels.

Our Inland Waterways System forms a network of more than 25,000 miles of navigable waterways. The Mississippi River and Gulf Intracoastal Waterways Systems are the major arteries of the network, constituting 58% of the total mileage and 73% of the prime barge channels with a depth of 9-14 feet.

The Mississippi River System which includes tributary rivers, is served by a Marine Industry of more than 1,800 firms. They operate a fleet in excess of 2,400 towboats and more than 20,000 barges.

I am pleased to state, that SCNO Barge Lines, Inc. is a major participant in the Marine Industry serving the Mississippi River System.

SCNO Barge Lines (formerly Sioux City and New Orleans Barge Lines) is an Iowa Corporation which was reorganized and reactivated in 1953. We are an established common as well as contract carrier providing service on the Missouri River since 1953 and operating under authority from the Interstate Commerce Commission between ports and points along the Missouri River on the one hand and ports and points along the Illinois Waterway, the Ohio River, and the Mississippi River, its tributaries and the Gulf Intra Coastal Waterway. SCNO initiated its water carrier operations on the Missouri River and continues to this date to be the dominant carrier on the Missouri.

SCNO Terminal Corp. is a subsidiary of SCNO Barge Lines. The Terminal Corp. operates barge loading and unloading facilities at Nebraska City, and Omaha, in addition to other river related facilities in Illinois and Louisiana.

Our Steinhart Terminal at Nebraska City, is located at Mile 562 on the Missouri River and has complete barge - rail - truck transfer facilities for all types of commodities, with crane lifting capacities of 12 tons. This terminal is served by two railroads and six trucking companies. We have covered warehouse space of 40,000 tons of dry bulk material, 16,000 square feet for general commodities and tank storage for 5.8 million gallons of liquid product. We also have bagging facilities for dry bulk materials.

Our Omaha Terminal, located at Mile 616 on the Missouri River, has covered storage capacity for 56,000 tons of dry bulk material, 38,000 square feet of general commodity storage, including bagging service. A high speed grain loading facility with 2,500 tons of storage is also available for loading any type of bulk material from truck - rail - or storage to barge. This terminal has complete, all type commodity, barge - rail - truck transfer capabilities with a 25 ton maximum lift. A foreign trade zone, which permits duty free storage and product processing is also available at this terminal.

As you know, the Missouri River has its head of navigation at Sioux City, Iowa, and flows southeast toward confluence with the Mississippi River, a distance of 732 miles. The project depth is 9 feet and project width is 300 feet.

The principle commodities that make up 90% of the traffic on the Missouri are grain and grain products, sand, gravel, crushed rock, soybeans, petroleum and petroleum products, and non metallic minerals and manufacturers.

The Missouri is an "open river", without Locks and Dams, and therefore navigation moves freely without the congestion and delays experienced on many locking rivers.

There is significant potential for commercial growth on the Missouri River as well as increased economic benefits for the region.

Inland Waterborne Commerce in the United States has been developed on a distinctive pattern directly serving vital sectors of public interest. The waterways are proving as a central medium contending with the energy crisis. They carry enormous volumes of coal and petroleum fuels to regions of scarcity. Likewise, the contribution of waterway transportation to American Agriculture in an era of mounting worldwide demand for food stuffs is also very significant.

With regard to the energy related and the agricultural commodities, the Missouri River will benefit from a growth in this commerce. The benefits are local as well as inland, through intra modal transportation systems such as rail/barge and the lash/seabee. It is not beyond reason, that low sulphur western coal may move by rail to Missouri River ports for transhipment by barge to destination.

With the lash/seabee method, overseas sales of U.S. products become a one step water transportation loading process with the lash/seabee barge going directly to an inland port overseas.

The barge and towing vessel industry has kept pace with shipper's needs, both as to equipment and service. Navigation techniques and aids have been developed which permit around-the-clock operations of towing vessels in all kinds of weather. The development and construction of barge equipment is keyed to shipper's needs.

Productivity and improvement in the domestic waterway transportation industry today is especially relevant in light of several economic trends. Productivity challenges have been met by growth in the past. For example, in the Inland Waterways Industry for the past four decades, technological development has allowed dramatic productivity improvement. Inland tows can produce 20 times the ton miles per day with a crew size ½ that of 40 years ago. The medium speed diesel engine, the Kort Nozzle, the tunnel hull, swing indicators, radar and telecommunications have allowed Marine Operators to increase maximum tow size from 5,000 tons to 50,000 tons. This technology has allowed Operators to squeeze the maximum ton mileage from each foot of channels depth and width.

However, Marine operating systems are now approaching the physical limitation of the Inland Waterways System. The quantum jumps in line-haul productivity will be more difficult to sustain in the future. Other areas of Marine Operations such as cargo handling or scheduling must pickup the slack.

Energy costs have doubled in the past year from most operators. This unexpected cost explosion puts more pressure on carriers to operate their vessels at maximum productivity.

Capital shortages and high capital costs also threaten to stifle the growth of the industry. Environmental controls have imposed severe constraints and boosted costs.

The list of challenges to the shipping industry is long and growing. Improved productivity is the most effective means of meeting the challenges.

Marine tonnage is expected to double by the year 2000. Relatively modest growth patterns are expected for commodities such as coal, fuel, and crude oil. However, important gains are expected for chemicals, cash grains, mining products and primary iron and steel. As a result, capacity constraints can be expected to develop as traffic grows.

We already know that bottlenecks on the Mississippi River System such as Lock 26, result in congestion and delays, thus increasing marine transportation costs and negatively affect the competitive position of water carriers. Hence, it is anticipated that unless the Waterways Systems capacity is expanded, the marine mode will be unable to realize the sizeable growth projected for it.

Methods of expanding capacity include removal of navigation obstructions, such as bridges with narrow pier spans, maintaining authorized channel depths and widths and extension of seasonal navigation whenever possible.

Development of Marine technology has reached an evolutionary stage. It is unlikely that revolutionary changes will radically improve the marine operating system within the current constraints of the Inland Waterways System. However, cargo handling technology and competing mode technology have the potential to produce exceptions to the forecasted pattern of development for the Inland Marine Industry.

Significant improvements in materials handling systems could expand the rivers reach to encompass a much larger market area. If the Marine mode achieves its projected market share of a much larger market area, future Marine tonnage could be substantially greater than forecasted.

From the standpoint of good utilization of natural resources, water transportation requires less energy per ton mile than any other method of freight distribution. Water freight requires 500 BTU's of energy for every ton mile of freight moved, rail freight requires 750 BTU's per ton mile, pipe lines 1,850 BTU's per ton mile, trucks 2,400 BTU's of energy per ton mile and air cargo 63,000 BTU's per ton mile.

With regards to the environmental concerns, pollution control, protection and enhancement of the environment, and maintenance of the ecological balance have long been a major interest to barge and towing industry. The industry adopted a position several years ago that it favored, supported, and would aggressively work to control that portion of pollution which the industry contributes to the navigable waters, even though authorities agree that such contribution is negligible.

The industry has worked closely with the Congress, Departments of the Government, and agencies having pollution control responsibilities.

The industry's broad objective is to achieve a balanced program consistent with the needs for pollution control and enhancement of the environment, which will not unduly strain the development of transport resources nor place undue burdens upon interstate commerce.

SCNO has been and continues to be committed to providing service on the Missouri River. Considerable investment has been made in our terminal facilities at Omaha and Nebraska City in order to provide shippers of agriculture and industrial products with the best trans-shipment and storage facilities. Likewise, the barge line continuously strives to improve its services and to expand our fleet through the

acquisition of new equipment. In 1979, we have added 40 new covered grain barges to our fleet, and anticipate an additional 50 covered grain barges to be delivered early the first quarter of next year.

SCNO Barge Lines, as well as SCNO Terminal Corp., desires to service the needs of the agriculture shipper in the most efficient and economical manner possible. Navigational improvements to the Missouri River, particularly in the areas above Omaha would greatly enhance the operating efficiency of barge lines. Currently, our towboats are limited to two barges when navigating above Omaha and are restricted to four barges between Omaha and Kansas City, with eight barges considered normal from Kansas City to the Missouri's mouth.

Compensatory freight rates are also required to maintain a satisfactory level of barge service on the Missouri River. In order that barges be available on the upper reaches of the Missouri River to receive outbound loadings of grain, it is necessary for inbound traffic to be generated from other rivers. The current level of rates simply do not compensate for deadheading of empty barges into the Missouri River for receipt of grain.

As operators on the Missouri River, we are optimistic that the river has a potential for expansion of trade, and the development of new industry.

Grain Transport Problems in Nebraska

by

Senator Calvin F. Carsten
Avoca, Nebraska

Agriculture has continued to improve our production of grains over many years to a point where we find ourselves in transportation problems that are serious to the farm structure.

We must realize we have peaks and valleys and that the peaks are where we find ourselves with the most severe problems. We need to develop a more adequate transportation system to meet all our grain movement needs. On-farm storage has increased the last few years, but the average operator is not able to hold more than one year's crop, and in many, many cases, much less than that. Many non-resident owners have none, and those grains must go to a place wherever they can find delivery.

Terminals on waterways will have to be expanded. As has been mentioned, an increase in barge traffic has happened, but without question, needs to be developed further.

Recent legislation in Congress has imposed user charges on commercial transportation on inland waterways in the form of a fuel tax; four cents per gallon increase in 1980 and it is to reach 10 cents per gallon in 1985. From the surveys that have been conducted, it does not appear to have any significant impact on the change in mode of transportation as accessibility seems to be of prevailing importance.

I mentioned larger terminals on waterways. It would seem advisable if several rural elevators with very small or perhaps no rail service could join in a terminal setting on a good waterfront location which could then use the barges if they were available for downstream transportation.

Another idea that has been discussed, and one which I think merits

investigation, is to use barges during the winter months for storage if those barges could be located at the outlets of power plants which are located on the waterways. This water is warm and stays free of ice all through the winter and then when the spring traffic opens up, these barges are ready to go.

Another suggestion is the use of a vacuum system for unloading at the gulf without going through a terminal. It would seem that this operation would be workable, would require less labor, and faster transfer.

It seems to me another aspect relating to the movement of grain is to promote in a much more aggressive manner the sale of processed foods to foreign markets instead of raw grains. This would still fulfill the need and desire for food from our country, but would be in a packaged form, it would be less bulky, and would even possibly use another mode of transportation to the foreign market, that being air transportation. Of course, this could only apply to food products.

I believe we need to develop a greater use of our grains on the farm through the feeding of livestock. I don't believe we are doing a very good job in promoting the natural resources we have in Nebraska to the fullest extent. This in turn would help in the delivery of our grain.

Let's not forget the use of grain for energy. This concept is too slow in getting into operation and while it is not the total answer to either the energy or transportation problem, it surely is a part of the total picture.

In my opinion, it is going to take coordination and cooperation of all means of transportation and uses of grain to actively address our grain problems. And I believe it is from the results of meetings like this and meetings to follow that it will be accomplished.

Thank you.

Grain Transport Problems from a Financial Viewpoint

by

Jim Magnuson
Omaha Bank for Cooperatives
Omaha, Nebraska

Thank you for this opportunity to share perceptions of the rapid changes taking place in the Nebraska grain industry and more particularly, how the area of transportation has and will continue to affect it.

Dr. Linsenmeyer has asked me to comment from the vantage point of the Omaha Bank for Cooperatives on 3 primary areas. These being:

1. The effect on the financial requirements and any limitations imposed on Nebraska cooperatives caused by changes in grain volume, unit shipment size and direction.
2. Financial alternatives available to alleviate transportation constraints.
3. Financial constraints of a broader or long range nature requiring joint efforts by the private and public sectors in attempting satisfactory solutions.

The financial demands of Nebraska grain marketing cooperatives have been intense in the face of the changes that have occurred in the grain industry. We have noted significant demands for additional short and long term debt capital to finance growing inventories and new facilities. The extent of these increasing capital demands are illustrated by the growth in loans outstanding to Nebraska cooperatives exhibited by the Omaha Bank for Cooperatives during the past 2 years.

	12/31/77	12/31/78	11/30/79
Average Daily Balances			
Seasonal	35,262,543	49,753,961	70,307,707
Term	51,107,967	70,953,149	81,888,593
Total	86,370,510	120,707,110	152,196,300
% Annual Growth			
Seasonal	-	41.1%	41.3%
Term	-	38.8%	15.4%
Total	-	39.7%	26.1%

We attribute much of this growth to the changes occurring in the grain and transportation industry.

The competitive advantages accruing to those associations with the capability of loading unit trains individually or collectively have been sufficient incentive for making substantial expenditures on grain related facilities. During the past 4 years, 34 Nebraska cooperatives either developed or expanded their unit train loading capability. As a result of this expansion, over 18 million bushels of efficient upright grain storage was added at a cost of approximately $33,600,000.

Demands for short term debt capital have also been extensive. The loading of unit trains requires the accumulation of large company owned grain inventories. Many cooperatives will have several months shipments in a company owned position at all times. This represents a substantial capital drain on the company and must be made up with short term debt.

External or debt capital demands, however, have been no less intense than the demands for internal or equity capital formation to finance the facilities and inventories and to support the additional debt. The large level of external funding needed requires the support of a broad financial

base. A significant concern of cooperatives has been their ability to generate and retain through savings and cash flow management, the levels of internal capitalization necessary to effectively compete in the grain industry.

The grain industry has traditionally been one of high capital investment and low per unit returns. The combination of these two factors shows that all new grain facilities must be supported by substantial existing sales volume or good potential for sales volume increases through trade territory expansion. By our calculations a new "no frills" elevator with trackage to load a minimum of 25 cars would have a total minimum cost of approximately $1 million. For this type of expansion to carry its own weight financially, revenues from additional sales volume of 5 to 7 times the elevator's storage capacity would be required to cover all expenses of operation and repay the related indebtedness in a reasonable period of time. This situation points out very clearly the constraints imposed on local grain operations by their trade territory and ability to capture on a consistent basis, the volume necessary to cover their financial obligations.

The number, distribution and capabilities of future unit train loading facilities must consider the ability of the trade territory to produce sufficient quantities of grain. Over building of grain facilities within a given trade territory may cause serious financial difficulties and result not only in losses to the elevator, but in reduced prices to the producer as elevators widen their unit margins to maintain revenues at a level sufficient to cover expenses and debt retirement.

The ultimate success or failure of a new grain operation is highly dependent upon potential sales volume. It is important to remember that sales volume necessarily involves movement of commodities to terminal or export markets by the local elevator. If this ability is impaired and the

association is therefore unable to generate the required sales volume, significant problems would be expected. For this reason there has been no single factor during the past few seasons, that has effected the ultimate success or failure of the local grain industry more than transportation.

As I just mentioned, we estimate needed sales volume to support a new facility at 5 to 7 times the elevator's storage capacity. To reduce this calculation to today's topic, for each new bushel or working elevator space, the country elevator must be able to originate 5 to 7 additional bushels and then obtain 5 to 7 bushels of additional transportation annually. These factors indicate that the present 34 cooperative unit train shippers need to be able to originate and ship 90 million bushels per year or approximately 2,000 rail cars per month.

In order to obtain this level of transportation, many associations have determined that they must do so privately by leasing or purchasing rail cars. Although this does address the basic transportation needs, it is certainly not a cure-all.

Effective car leasing or ownership involves constant work on the part of the lessor or purchaser to keep track of the cars, to schedule their use and above all, to keep them moving to recover their costs through mileage credits or freight rate advantages. Again, as with facilities, a sound financial base is a prerequisite to obtaining private rail cars. The ability of the local cooperative to supplement transportation equipment through purchase or lease is very much limited by their financial position and historic and potential operating record.

As an example of the scope of the transportation related obligations presently being incurred by Nebraska cooperatives, an unpublished survey of agricultural grain marketing cooperatives in Nebraska and information

available to the Omaha Bank for Cooperatives indicates that nearly 2,000 covered hopper cars have been, will be or are being seriously considered for purchase or lease for delivery by the end of 1980. Assuming an average lease cost or debt amortization of $500 per car per month, Nebraska cooperatives would accumulate financial obligations of $1 million per month for at least the next 5 years.

As with the over building of new facilities, the acquisition of private transportation can reach a saturation point and potentially have the same adverse effect. We are concerned that cooperatives do not over react to the transportation crunch of the past few seasons, but look far enough into the future to determine their long range needs.

The effect of changes in the Nebraska grain industry on the financial needs of cooperative elevators has been to increase their financial requirements substantially for both facility and inventory financing. The bottle necks or restrictions that each cooperative must face include:

1. Their ability to generate a satisfactory rate of internal capital growth,
2. Their ability to obtain external or debt capital,
3. The potential of the trade territory to support the proposed operating changes, and
4. The transportation to support the sales volume requirement of new facilities.

We must recognize that these 4 areas show very plainly that every county elevator does not need to be, nor can they afford to be, a unit train shipper. Significant economic advantages of higher facility and transportation utilization and of the current or future unit train freight structure accruing to unit train shippers will increase competitive pressures on single car and off rail elevators. By passing a portion of these

advantages on to the producer through the price paid for grain, the unit train shipper effectively increases the trade territory. An Iowa State University study published in the November 1979 Farm Journal titled "How Far Can You Afford To Haul Grain" showed for each additional 5¢ per bushel paid at the elevator a producer could haul grain an extra 21.7 miles in a 300 bushel single axle truck and 28.6 miles in a 450 bushel truck and recover all variable and fixed costs of transportation including labor. Many smaller cooperative elevators, therefore, located off rail or on minimum service branch lines and with neighboring unit train shippers will need to work closely with their neighbors to develop a cost efficient marketing program.

In order to assist the associations not on rail or those who cannot justify the expenditure for unit train facilities we are encouraging the investigation of mergers, acquisitions, joint ventures, and working arrangements. The common goal in all these areas is to provide cooperatives with the most cost efficient combination of facilities and transportation. Thereby helping to increase the ultimate return to the agricultural producer. If one or a combination of these factors is an economically viable alternative, the Omaha Bank for Cooepratives will be able to consider financing packages.

In order to better serve agricultural producers through their cooperatives, the Omaha Bank for Cooperatives is giving its support to proposed amendments in the Farm Credit Act of 1971 now pending before the House of Representatives and Senate. This new legislation contains two provisions directly affecting the Banks for Cooperatives:

1. The legislation would lower the farmer member eligibility requirement for BC financing to 60 percent of voting members or such higher percentage as district boards may establish. Under present law, 90 percent of the voting members of a

cooperative (70 percent in the case of rural electric cooperatives) must be farmers in order for the cooperative to be eligible for BC financing. By lowering the requirement to 60 percent, BCs will be able to more fully serve the credit needs of rural America without abandoning the principle of farmer control of the eligible co-ops. Moreover, district boards would retain the right to set higher farmer-member eligibility requirements for cooperative eligibility if they so choose.

2. The legislation would authorize BCs to finance agricultural export transactions in which a U.S. cooperative is a primary beneficiary. In order to promote the expansion of U.S. agricultural exports and to increase the share of American farmers in the benefits derived from those transactions, the System proposes that BCs be equipped to offer the same basic financial services to cooperatives that are now being offered by several commercial banks. Among other things, this would entail authorizing BCs to:

    a) make deposits in foreign banks,

    b) receive and hold credit balances from banks and borrowers,

    c) buy and sell bankers acceptances,

    d) purchase time drafts payable by foreign buyers of agricultural products, and

    e) engage in currency exchange.

The amendment would authorize BCs to make loans to associated parties where there will be substantial benefits to a member coopera-

tive. It would also allow BCs to participate in ownership of institutions for the purpose of collecting information about foreign markets and expediting legal and financial transactions.

Summary

The ability of Nebraska grain marketing cooperatives to adjust to changing competitive and market pressures is highly affected by the ability to generate internal capital, obtain debt capital, and by the trade territory and the availability of transportation.

For these cooperatives who are unable to fully meet the demands of the competitive market place we support a coordinated cost effective effort with neighbors.

The proposed amendments to the Farm Credit Act of 1971 will allow the Banks for Cooperatives to provide additional debt capital and service to farmer owned agricultural cooperatives.

Grain Transport Problems from a Development Viewpoint

by

Stuart Miller
Nebraska Department of Economic Development
Lincoln, Nebraska

Before addressing the questions assigned to me, I would like to briefly describe the role of the Department of Economic Development in transportation questions and how the Department's programs relate to the issue of grain transportation.

The Department of Economic Development is responsible for state government programs in industrial development, travel and tourism, and community and housing development. All of these programs are influenced in one way or another by transportation. The costs of transporting inputs to manufacturing plants in addition to costs of getting manufactured products to purchasers are vital to the profitability of industry and are key determinants of the kind, size, and stability of this business sector in Nebraska. The influence of transportation costs on travel and tourism activity is obvious. And the renewed interest in downtown revitilization in small communities in the state testifies to the impacts of transportation costs on consumer behavior.

My agency comes to the issue of grain transportation through its involvement in the state's rail planning program. At the end of 1978, the state initiated in earnest the preparation of a state rail study with coordination of this interagency effort being provided by the Department of Economic Development. This study is based upon the general goal of an efficient intermodal transportation system which provides the services required of a growing diversified state.

The Initial state rail plan is to be completed in March 1980 and will contain the groundwork for an ongoing rail planning program in state

government. The principal study element in the plan is the analysis of 12 branch lines for which abandonment applications have either been filed with the interstate commerce commission or are being comtemplated. The purpose of our analysis is to determine the future viability of these lines and to estimate the public impacts of losing service on each. Other issues addressed in the plan are the impacts of coal transportation, use of abandoned right of way, car service problems, and the need for a comprehensive data base on railroad information.

Turning now to the questions I have been asked to address which are, first, what major constraints do I see to providing grain transportation services in the state; second, what are the policy alternatives either investigated or before us; and third, what cooperative efforts appear to have possibility for success.

A number of constraints to grain transportation by rail have been suggested and are being described during this seminar. I will mention a few of the important ones here. One of the obvious constraints is a transportation system which is generally incapable of responding completely to the fluctuations in demand for service by the grain industry. These demands fluctuate both seasonally during the year, and change from year to year depending upon shifts in grain production and/or foreign demand. An expansion of the system to meet the peak demands would also result in a system which is partially idle during off-peak periods and idle cars result in lost revenue.

The domestic transportation problems are aggravated at sea ports when freighters are incapable of handling the glut of grain being made available. Such bottlenecks turn rail cars into warehouses and leave locomotives idle until such time that cars can be unloaded. Furthermore, inefficiencies are

increased for the carriers when cars return empty rather than loaded with merchandise.

Another perceived problem is the growing need for coal transportation and the extent to which this causes a diversion of equipment away from grain transportation. The pressures on the rail industry to respond to increased eastern and southern demands for coal has led to substantial investment in new track, equipment, and facilities. The increases in revenue from coal hauling will indeed provide financial capacity for additional equipment and service to the grain industry. But the backlog in orders for new cars and locomotives is undoubtedly placing constraints on the ability of carriers to respond to grain transportation demands.

Finally, there is the problem of rail service to the small elevators which infrequently load a small number of cars. There is a history of poor service on these lines in addition to a long run absence of maintenance. Currently, service on these lines is costly to the railroads and aggravates the general car availability issue. Although this particular element of the grain transportation problem is important, we at least have some consolation from the fact that branch line abandonment is not as severe a problem in Nebraska as it is in our neighboring grain states of South Dakota and Iowa. During 1979, only one five mile branch line has been added to the list of lines in Nebraska being studied by railroads for abandonment.

Given the above set of conditions, what policy options are available for state government to assist in easing the problems? I should make it clear that the state's regulatory powers to control the number and availability of cars for transportation of grain are effectively nonexistent. In 1975, the state Supreme Court ruled unconstitutional the state statutes which gave the Nebraska Public Service Commission power to issue rail car service

orders and operating rules for car availability. Such powers for regulating the distribution of cars effectively rests only with the Federal Interstate Commerce Commission.

A second possible state government role is the provision of financial capital, either for assistance to shippers in the purchase of cars or in improving transportation facilities. A program for utilizing federal funds for branch line upgrading is a possibility within the next year. The legislature will be considering legislation in the upcoming session which would establish a mechanism for supplying funds to upgrade selected branch lines. Federal funds available for such a program in 1980 would be about $700,000. Although this is not a large amount and would only provide a minimal amount of branch line improvements, it would represent the beginning of a possible state commitment to retain branch lines when the public benefits of retention exceed the costs of losing the line. I should also mention, however, that there is a constitutional restriction of extending the state's credit to private enterprise, which means that if such a bill passes it could be subjected to a court test.

Another way in which state government can participate is by representing the state's interests in federal proceedings. In branch line abandonment proceedings, the state has during about the last year been expected to play a stronger role in providing information to the ICC in its ruling process. Through the rail planning program there is opportunity to more fully analyze abandonment impacts than has been true in the past. The Federal Railroad Revitalization and Regulatory Reform Act of 1976 was intended to reduce the bureaucratic red tape in branch line abandonment proceedings. However, the intended streamlining of the process did not immediately occur, one reason being the lengthy information gathering process of such proceedings. As

states initiate rail planning programs, much of the required information is expected to be provided by those programs.

Such programs also provide the state a means for analyzing abandonment impacts to determine a state policy on each abandonment, and for more effectively participating in the deliberations of the Interstate Commerce Commission.

Other issues which the state has addressed in its relations with the federal government include the bankruptcy proceedings of the Rock Island and the Milwaukee Railroads. In the Rock Island case we have urged the continuation of service and will be expressing the state's interests as options for the line through our state become clear. Although the Milwaukee Railroad provides only minimal service in Nebraska in Omaha, we have participated in activities regarding the restructure of that railroad, first, because of possible impacts of restructuring that railroad on the amount of rail traffic in Nebraska and, second, because of what a restructuring of the Milwaukee may imply for a future restructuring of the Rock Island.

The state has also monitored closely the events related to the application of the Chicago & Northwestern for funds to construct a coal connector line in eastern Wyoming and western Nebraska. We have expressed reservations to the Department of Transportation about that project because of its impacts upon communities through which the coal traffic would pass, but more importantly because of the questionable future of the Chicago & Northwestern rail line across northern Nebraska--a line which is vital to the future of that vast area of our state.

There is also a role for state government in cooperating with neighboring states to strengthen the representation of our interests in Washington. Transportation issues are issues which cross state lines and require

communication between states. We have worked considerably with our neighboring states in dealings with federal regulatory agencies and the federal court regarding the future of the Rock Island and Milwaukee Railroads. It has become apparent that we can be much more effective in influencing federal policy when we join forces with our neighbors.

In looking ahead, I think there is a greater role for cooperation in satisfying the grain transportation needs in Nebraska. First, Governor Thone has on numerous occasions emphasized the growing importance of international trade and the commitment of his administration to assist in increasing the foreign demand for Nebraska's products. At the same time, the awareness that exports require an efficient transportation system, will result in greater participation by state government in trying to improve our transportation system. Renewed interest in the Missouri River as a transportation corridor will lead to additional discussions on that topic. There will also be greater efforts by state government to play a facilitator's role in the relations between shippers and carriers to improve car service--as in efforts to spread the use of grain gathering trains and in appropriate alterations of car service contracts. Although I do not expect state government to become the principal source for either rail car service regulations or financial capital, for cars and equipment, the state can at minimum be effective in providing technical assistance to shippers and in representing the state's interest with the federal government.

Changes, Constraints and Alternatives to Grain Transportation

by

R. L. Godfrey
Union Pacific Railroad Company
Omaha, Nebraska

I. Opening Comments

A. Planning and preparing have never been more important than at the threshold of the 1980's. The pace of change quickens each year in all phases of business and the transportation industry is no exception.

B. The Union Pacific seeks for changes which improve our efficiency in moving grain.

Becoming more efficient and reducing waste will be major factors during the 1980's and beyond.

II. Constraints on Grain Movement

A. The 1970's saw tremendous increases in demand for the transportation of grain. During the decade combined U.S. corn and wheat disappearance rose almost 60 percent with exports surging 220 percent.

B. These dramatic percentage increases translate into hundreds of millions of bushels. To move just the additional exports of corn and wheat during one year would require almost 70,000 jumbo covered hoppers.

C. At the same time that major demands were being placed on transportation, severe deterioration of significant portions of the U.S. rail system occurred.

The deterioration resulted from soaring costs and a rigid regulatory system which prevented timely adjustments, causing many railroads to

sink deeply into an economic morass.

D. Even conditions for the stronger railroads have been less than ideal.

1. Car builders require 1½ to 2 years to fill car orders.
2. Fuel costs for the U.P. have risen almost 90% in only one year (36¢/gal. in Sept. 78 to 67¢/gal. in Sept. 79 and 70¢/gal. in Oct. 79). Significant fuel cost increases over the years, coupled with curtailed supplies, have caused speed and horsepower limits to be established.
3. The speed of ocean vessels has been reduced in order to conserve fuel and their combined effective capacity has been lessened. Rail cars have backed-up awaiting vessel arrival.
4. Port congestion delays equipment. When cars are not unloaded upon arriving at the port, they must be placed on hold in the yards resulting in lost revenues and increased switching costs. These delays are caused by more cars arriving than the port can handle, special handling of I&D cars, port elevators trying to market too many types of grain, etc.
5. And finally, some elements in the grain trade refuse to change age-old systems of handling grain. Improved grain transportation systems will undoubtedly cause individual dislocations but changes must come if this country hopes to realize its full grain marketing potential.

E. Continuity in a grain transportation program is the key to moving large quantities. Coupled with continuity are the efficiencies resulting from repetitive movements similar to unit trains. Special grain trains closely approach the effectiveness of the pure unit train and at the same time promote continuity.

III. Special Grain Train Program - Overcoming Constraints

A. Overview.

1. During the past few years, we have invested a considerable amount of time and money in developing an energy and equipment efficient train program for feed grains to the West Coast.

2. Our 50-car export rate structure, established to the West Coast in 1975, first signalled Union Pacific's interest in developing this market. Expansion of the program later saw 25 and 75-car rates applied to export movements. The export levels were also extended to the domestic market for 25 and 50-car shipments of feed grains.

   Later, competitive pressures caused the export rate structure to be lowered. A bargain 25-50-75 car export rate structure came into being in 1977.

3. Since 1975, we have seen startling growth in export demand for this service - demand which few, if any, foresaw. This demand has resulted from several factors.

   a. The Eastern part of the United States suffered two severe winters in a row (77-78 and 78-79) which restricted the flow of grain through the Gulf and Eastern ports.

   b. Two major Gulf elevator explosions during the Winter of 1977-78 curtailed export capabilities there.

   c. Not only were the negative factors of tragic explosions and severe weather benefiting the program, but also the positive influence of increased grain production in Nebraska.

      From 1975 to 1978, corn production in Nebraska increased 47% and milo 32% and it is projected coarse grain production will be up another 4% this year from record 1978 levels.

d. As the grain trade began looking for other outlets for this tremendous increase in production, the West Coast was experiencing excess fobbing capacity.

e. The Union Pacific has also played a positive role for we have established a competitive service and greatly moderated ex parte increases on multiple-car rates, maintaining the lowest possible levels.

4. All these factors have combined to produce some rather interesting results.

a. When this program began there were only a half a dozen train shippers. Others were capable, but did not envision the train program as a viable marketing tool.

We now have about 52 elevators able to load trains with several additional elevators being upgraded or constructed. The vast majority of these grain train elevators are located in Nebraska.

As information, about one-half the shippers are able to handle units of 25 cars. An additional 40% can load 50-car units and about 10% are able to handle 75-car units.

b. Also, the increase in tonnages moved under the Special Grain Train program has been phenomenal, as is evidenced by the following figures.

YEAR	EXPORT (Tons)	DOMESTIC	TOTAL
1976	119,000	50,000	169,000
1978	2,149,000	470,000	2,619,000
% Increase	1706	840	1450
1st 9 mos. 1978	1,490,000	316,000	1,806,000
1st 9 mos. 1979	2,816,000	470,000	3,286,000
% Increase	90	49	82

B. While past rates of growth would be impossible to maintain, we do see continued strong demand for this service in the future.

1. Presently 30% of U.S. corn exports go to Pacific Rim countries. In 1978, West Coast corn exports totalled less than 6% of the total of U.S. ports. There is an excellent growth potential in both the total and the West Coast export markets.
2. There is also the possibility of moderate growth in the domestic market through the development of wet corn milling operations on the West Coast, continued growth in the existing domestic feeding operations, and eventual access to the Imperial Valley.
3. In terms of the export market, ocean freight differentials will favor the West Coast over the Gulf because of rising fuel costs and shorter turn-around times and distances to Pacific Rim countries.
4. Both the domestic and export programs will benefit from increased continuity and performance by the railroads, suppliers and receivers. This will occur as our combined experience of working with the train program mounts.
5. In addition, utilization of equipment will also favor West Coast movement. A car moving in train service can handle twice the grain that a covered hopper can in single-car service to the Gulf.

C. In order for the West Coast feed grain program to continue growing, some suggestions might be in order:

1. Of critical importance is the absolute number of cars in train service. Traditionally, private equipment on the

Union Pacific accounts for five to ten percent of the total volume in bulk grain movement.

Because of inadequate levels of private covered hoppers on the U.P., we have implemented a matching program for trains which has resulted in about 40% of the equipment in grain trains being furnished by shippers. This has allowed a significant increase in grain train capacities. Union Pacific cars are matched with privates for a minimum commitment of twelve trips or six months. Private equipment will continue to be necessary to maintain a strong train program. The U.P. cannot do it all.

2. It should be emphasized existing West Coast facilities, of which there are six primary export houses, are capable of doing much more business. But in order to do this they must go to a dedicated program of either feed grains or wheat.

   Because West Coast facilities have primarily been developed for handling wheat exports, it is important that new elevators and/or existing elevators be designed to efficiently handle feed grains. This will be necessary to enable the West Coast to fully participate in the much larger feed grain export possibilities.

3. The preponderance of the train program is keyed to Nebraska production with some Iowa grain funneling into Council Bluffs area elevators.

   With Nebraska running five to eight years behind the train programs of Iowa and Minnesota, it would be well to learn

from their mistakes and successes. Origin elevators must use discretion so there will not be too many train facilities in a given area competing for the same grain.

IV. Wheat Trains - Overcoming Constraints (Another Example)

Because of the positive results of the feed grain train program, we are now implementing a wheat train program. This program will apply from Nebraska, Kansas, Colorado, Wyoming, Idaho and Utah to West Coast export facilities.

It will incorporate the same basic features of the feed grain trains with two exceptions:

A. The rate groups will be much smaller on the wheat trains. For example, in the Midwest, there will be a total of eight rate groups extending East from Denver to Kansas City and Omaha.

B. Perhaps the most significant new feature in connection with the wheat trains will be the provision to allow loading from multiple origins. As many as five elevators which are served by the same local train crew will be able to pool their shipments to a single destination elevator and participate in a rate lower than the single car rate level. An even lower rate will be available to train shippers needing only one origin elevator.

C. The multiple-origin loading provision is being offered to:

1. Allow more participants into the program immediately, and
2. Get more grain moving in the highly-efficient train-type operation.

V. Because the U.P. is a viable railroad, we are able to offer special service on a consistent basis.

A. A prime example is the eight day service cycle set up in many parts of Nebraska. The only limiting factor is daily equipment supply.

This service results in additional costs to the U.P. but with excellent shipper cooperation has allowed us to move our rail cars much more efficiently than in regular local service.

B. We have also been able to increase efficiency when adjacent shippers cooperatively send their cars on a particular day to one terminal city.

C. Another highly effective program has been special trains formed of U.P., shipper and foreign line equipment going from a terminal to a Gulf port and then returning for another load.

VI. Of the many opportunities confronting the railroads, none is more inclusive than possible modifications to the regulatory environment under which this industry must do business. Regulation tends to stifle initiative. The more it is applied the more counter productive it becomes. The railroads must have greater marketing flexibility if we are to survive as free enterprises.

A. Nevertheless, the U.P. does see a need for limited regulation--some is necessary.

One example is in the area of rate bureau proceedings. Rail carriers are highly interdependent and rate bureaus provide efficient vehicles for rate discussions and decisions relative to interline rates. Antitrust immunity is granted for these deliberations and we realize regulation is necessary to prevent abuses of this immunity.

B. However, the one area which railroads would receive the greatest benefit from deregulation is in other pricing matters.

1. The ICC's ability to suspend rates imposes unnecessary burdens on railroad flexibility. It tends to create in rail pricing

strategy the "ICC factor," i.e., What is the Commission's current thinking? Will it offend the Commission? Pure economic and marketing principles are distorted, either consciously or unconsciously.

2. Rates currently are not responsive to changes in demand for equipment. Grain markets create equipment surpluses or shortages and the railroads have few realistic means of responding.

3. Under less regulation rail carriers would be able to influence demand. We are generally in favor of a system of contract rates backed up by a spot market.

   Contracts would be negotiated between carrier and shipper. At the present time, we feel a carrier should receive a premium price for guaranteeing service and equipment. The contract would extend for a definite time period and the terms would not be made public.

   The spot market would fluctuate with the supply and demand for equipment on a daily or weekly basis.

4. Contract rates currently are not used to any extent for several reasons, namely:

   a. They have to be approved by the Commission which must enforce common carrier obligations. Basically this means we must treat everyone equally. However, as conditions change, such as equipment demand, we would want to modify new contracts. Would all existing contracts then have to be altered to maintain equality? Also a shipper with a contract guaranteeing equipment might see his

neighbor, a non-contract holder, getting no equipment. What constitutes equal treatment?

b. Also, contracts are made public. We see no need for this burden. A public contract would basically be the same as publishing a rate. We would spend considerable time defending why elevator A and elevator B can't get the same rates. In essence, we would be forced into an endless political turmoil.

C. The ICC has attempted to influence the distribution of rail cars in short supply through service orders. Generally, most service orders have had a negative impact on unit train operations.

1. These orders fail to take into consideration forward contracting and fixed programming that exists in grain marketing and they do not relate to existing activities within the grain industry.
2. Generally, they are ill-timed and unresponsive to the real needs of the grain and transportation industries.
3. The U.P. favors deregulation in this area.

VII. Conclusions

A. Tremendous demands are and will continue to be placed on the U.S. transportation system.

B. New methods of moving grain must be developed even though they will displace some traditional parts of the system. These new methods include:

1. Special Grain Trains
2. Shuttle Service
3. Eliminating or reducing costly services, such as:
   a. Transit and
   b. I&D

C. Rail carriers, who are economically able, will provide the service and spend the money to continue providing competitive service - a profitable rail system is essential.

D. The railroads must receive significant relief from the burden of over regulation.

Grain Transport Problems from the Motor Carriers' Viewpoint

by

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Thank you, Dean Linsenmeyer. Good afternoon, ladies and gentlemen. It is my pleasure to be here today to appear in this Nebraska Grain Transportation Seminar sponsored by the University representing Nebraska Motor Carriers' Association.

There is probably nothing more important today to the State of Nebraska than going into depth with such an important issue as transportation of agricultural products. American farmers know better than anyone else that the food chain is only as strong as its weakest link. Throughout most of America's history transportation has been a strong link in this chain and few have given it any serious consideration because it was usually available, usually efficient, and usually dependable.

However, we are beginning to see at all stages of the game the key role that transportation plays. All signs suggest to this state and this nation that stress is being placed on our transportation system.

The U.S. transportation system is generally accepted as the finest in the world, including a network of nearly 200,000 miles of rail, nearly 26,000 miles of inland waterways, and more than 3 million miles of roads and highways. This network delivers 100 million tons of inputs to American farmers and ranchers. Who, in turn, then become some of the largest shippers in the world with over 425 million tons of food and fiber returning to the marketplace.

If we were all going to sit down today and start from point zero to design a transportation system to serve agricultural needs in America--

if we did not have any preconceived concepts as naturally you would expect me to have--that the mobility of a truck is paramount--or the concepts that the railroads have that the capacity of their facilities is paramount--or the concepts of barge lines about the efficiencies they possess--and if, of course, we overlooked the concepts that are paramount in the eyes of the airline industry as well as the pipelines--if we didn't all have these concepts today but only knew one thing that we were designing a completely new system--then I would suggest to you that there isn't a person in this room that would disagree that the final system would be a combination of the best of the rails, the best of the barges, the best of the trucks, and the best of any other modes that might contribute to the final product--a completely modernistic transportation system for America.

But such is not the case of starting at point zero. It is a case of starting from where we are today and building upon it. Transportation planners all over this nation are wrestling with the various problems of transportation including the rural areas. Many different approaches are being taken but the U.S. Department of Agriculture, the Department of Transportation, and the Interstate Commerce Commission have all called for various changes within our system.

Comprehensive plans on deregulation are forthcoming for the trucking and the rail industries. A public task force composed of prominent agricultural shippers, carriers, economists and governmental officials are formulating our first rural transportation policy and are charged to submit their report to the Congress in January of 1980.

But with all of these studies and all of these considerations we find the tug and the pull and the concerns of all being injected into a consideration of "Where are we going to be tomorrow?"

The simplest solutions that some people seem to believe will solve all of these ills, is just not going to be forthcoming. There is no way that you can hope to improve transportation in America by "nationalizing the railroads." There is no way that you are going to improve transportation in America by "deregulating all of transportation." And there is no way that you're going to improve transportation in America by afflicting burdensome taxation on one segment for the purposes of "equalizing rates" with another segment.

I would predict to this seminar that if ever the time comes that highway transportation is totally deregulated in America, you will see the first adverse effect on the transportation of agricultural products. And the reason, even though I am fully aware that most agricultural products move under an exempt clause, is that those individuals and small businessmen who are predominately in agricultural product transportation today would become convinced that they are the transportation pioneers of the future and they would gravitate to the regulated traffic like "bees swarm to honey" and railroad branch line abandonments would take a back seat to the abandonment of the truck transportation system of America in the agricultural sector except on a catch-as-catch-can basis.

In case any of you have any doubts about the regulated, for-hire common carrier of highway transportation being vital to rural America, the answer I can assure you is unequivocably yes! Regulated motor carriers today are bringing into rural areas farm input items as well as manufactured and consumer goods. And they are returning in addition to the manufactured items significant quantities of unprocessed agricultural commodities. A 1977 study disclosed that 35% of the truck transported agriculture products in America is moving by regulated carriers.

With this thought in mind I want to suggest to those of you that may not be familiar with it, that the economic development of rural America has contributed immensely to the availability of transportation resources throughout this nation. I have spent a considerable amount of time in industrial development in my Chamber of Commerce work--and I can tell you I am proud of the successes we had in Columbus, Nebraska, while I was with the Chamber there, as well as Salina, Kansas, in our industrial development programs--transportation almost universally was the No. 1 criteria of all manufacturers looking for plant sites for their operations. And believe me, if all we had were a few hundred individuals operating out of their homes with a truck and no interlining capabilities, no terminal centers, no dispatch service, and other factors that regulated transportation offers to vital production facilities, you can rest assured that those sleepy areas of rural America that are bustling about with industrial production today would not be in existence tomorrow.

One of the problems that many of you, of course, are not aware of as it pertains to the movement of exempt agricultural commodities by truck are the problems that exempt transportation is having in the field of antitrust. Transportation brokers who serve as intermediaries between the shippers of agricultural commodities and the exempt owner-operators that actually haul the produce, oftentimes utilize rate sheets, a form of price fixing for which there is no antitrust immunity. The ineffectual efforts on the part of the Justice Department to prosecute the use of rate sheets by brokers is evident. And while there are those of you that say get the government totally out of transportation, I would suggest to you that without government's overview of these kinds of price fixing abuses you are going to see nothing but a decline of available transportation services even in the field of exempt truckers. Corrupt brokers who skim a good portion of revenue off the price of a load are not going to go away by themselves, and telling states to

enforce this is absurd. Whether you realize it or not, exempt truckers complaining about these problems are in effect suggesting that some type of regulation of brokers and rates are essential.

Well, what does all of this have to do with the subject matter that we're here to discuss today? Well, it has just this to do about it.

Upgrading the railroad lines and tracks, deregulating the truckers, affixing user charges on the waterways, expediting branch line abandonment, expanding the agricultural exemption commodities to include additional product lines, removing the percentages on agricultural cooperatives to transport non-member, non-exempt motor freight, is not going to solve the problem of the country elevator who is told by a giant international grain marketing corporation that they can have a jumbo hopper car for moving on a unit train but the price of the product will be 21¢ a bushel less, or if the elevator elects not to sell he has to pay a minimum of 60 days storage on that commodity as well as waive the inspection of it and accept the grain terminal's grading; it is not going to solve the problem of the grain on the ground for the country elevator who is actually getting less railroad cars today than he was in 1946; it is not going to solve the problem of the farmer who is willing to move his products to farm by truck in the absence of the railroads but is told that it will cost him 8¢ to 20¢ per bushel on his bid because of the in transit privileges available to grain companies; and it doesn't do a whole lot of good to tell rural America that there were 13,000 covered hopper cars put into service last year when 19,000 40' boxcars were retired from service due to age and poor condition.

The pressure relief valve in grain transportation today, even though I confess to being prejudiced, is the truck. Trucking has claimed a dramatically increasing share of agriculture transportation business in many

areas. In 1973 the railroads had over 24% of all of the fresh fruits and vegetable movements in this nation and today they hold a scant 8%.

But when we talk about the movement of grain for the most part we're talking about trucks delivering commodities to the rail and the barge loading points as opposed to criss-crossing this nation to the ultimate receiver. Trucks are especially adapted to the short and intermediate hauls of these kinds of commodities, but in the final analysis we have got to quit fighting ourselves and sucking on our own blood if we are going to make this transportation system of ours in Nebraska and America work. Government can and should play a role in bringing together the kind of intermodal functions that this nation needs.

The mishmash of inconsistent state trucking regulations is absolutely deplorable. And while we like to think things aren't quite as bad in Nebraska, you ought to see it from our side of the table if you want to know just how bad it really is.

When you consider the 100 million tons of inputs to the American farmers and ranchers, and the shipping of 425 million tons of food and fiber to market all of which is going to have to originate and arrive at final consumption via highway transportation--we're all smart enough to know that there are no railroad tracks on the farms and there are no railroad tracks at the super markets, and there are no shopping centers at the riverfronts--we have no choice but to have a system of highways that are taking care of the needs of America and are carrying the greatest amount of productivity that is possible.

And in case any of you are thinking about the deterioration of rural roads throughout America and the causes of those coming from the weights on the highways, let me suggest to you that the United States of America

has the lowest standards of axle weights and gross loadings of all the countries throughout Europe and Canada in North America. If we have a road crisis in America today, how come? Is it because our engineers are not as smart as the engineers in those other countries? Is it because the construction companies who are building our system are not as good? Is it because our construction standards are too low?

These are questions you need to be asking because you're talking about productivity and you're talking about productivity of a mode of transportation that is absolutely vital to rural America. I don't know and I'm not suggesting that every state in this nation ought to have 148,000 lbs. gross vehicle weight authorized on their highways like Michigan does, but I know one thing, if I was a politician I would do everything in my power to maximize the productivity of all transportation modes and the first competitive transportation mode that came in and tried to curtail the productivity of a competitor via legislation should be put down immediately. You can argue if you want about not letting a company such as P-I-E have productivity advantages on the weights they transport but keep in mind whenever you restrict them you restrict truck weights on every farmer in the entire State of Nebraska because he comes under the same weight standards for trucks transporting his products to the marketplace.

Possibly, the same thing can be said for the railroads in many areas. Instead of government looking for ways to harass by taxation or other schemes the railroads of this state and this nation, they should be looking for ways of putting together the inherent advantages of each mode to do the effective job necessary to strengthen transportation as the vital link that it is to agricultural marketing and production.

Unfortunately, it may never happen. But if the tragedy of Iran was exercised in this country by the United States government making hostages of the presidents' of all of the railroads--of all of the truck lines--and all of the barge companies, and they were put in a room and told the key will not be returned until the problem is solved, I can assure you before the dark of night had passed 100% improvement of what we have today would emerge.

While I haven't come here with an abundance of solutions, I guess I would suggest that there is only one way we're going to resolve this and that is working together instead of apart. It's going to be by cooperation instead of coercion. It's going to be by understanding and not by demanding.

And finally, I guess I would like to close by suggesting that, yes, there are those who believe a lot of America's transportation problems would be solved in all areas if the regulated motor carrier industry lost its deregulation fight. But I would simply suggest to you that there's the story of the man injured in an accident involving a car and a horse trailer. The injured man, who was driving the car, brought a court suit since he was not at fault. As he was cross-examined by the defendant's counsel he was asked, "Did you or did you not say to the state trooper at the scene of the accident that you were perfectly fine and weren't injured at all?"

At which the injured man said he could not answer that with a simple "yes" or "no" but he explained it this way: "The state trooper who was first on the scene examined the horse and the overturned trailer. Realizing that the horse had two broken legs he pulled out his pistol and shot

him. Next he walked over to my pet collie and finding his legs broken he again pulled out his pistol and shot him."

"Finally," the man said, "he came up behind my pinned car and asked me how I was. Sire, if you think I was going to say anything but 'just fine, officer, just fine' you are absolutely nuts!"

This is the message that I want to leave with some of you who think that the deregulation battle on trucking is all over since the Civil Aeronautics Board was shot down in 1978 and the I.C.C. has effectively destroyed a great deal of the transportation of motor carriers in 1979.

We know there will be significant changes and we are supportive of many of these changes but our industry is not going to stand still for totally dismantling our system today; the vast majority of the shippers of this nation are not going to stand still for it; and I submit to you that those who understand transportation in the grain trade and the agriculture sectors are not going to stand still for total and complete motor carrier deregulation.

There are going to need to be some compromises of course. And a cohesive government policy may be almost impossible to forge. But the problems are there, the stakes are high, and we've got to chart a cooperative course in transportation if we're going to solve America's problem in this field.

A Long Range Interpretation of the Transportation Dilemma

by

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Events of our day are forcing attention once again to the nature of the freight transportation system of the United States. Years ago there was widespread interest in the subject, and it probably was highest in the agricultural areas of the Plains where reliable transportation services at reasonable costs are vital to the local economy.

It would not be correct to say that transportation as a public issue long lay in oblivion. Periodic shortages of freight cars kept transportation issues alive, even if they did not become critical.

In the last couple of years, freight transportation has become a contentious issue and agriculture has been in the forefront of the sectors complaining of a near breakdown in services available. I need not recite the litany of unavailability of cars, slow delivery times, clogged arteries; and of having to turn to more costly truck transport when rail shipment becomes impossible. I offer my brief comments against the background of my service this past year as a member of the National Advisory Task Force on Rural Transportation. This 15-member group was asked by the Congress to review the entire transportation system in agriculture and rural areas. Our commission extended to passenger transport but owing to pressure of time and our limited competence we confined ourselves to freight transportation.

Being an educator, I have given most thought to defining, describing, and delineating the nature of the problem. During past years of only

intermittent concern for agricultural transportation, much of the basic economics of transportation and its distinctive features were virtually forgotten. Moreover, to be frank about it, it would be easy to suggest that economics of transportation is so similar to the economics of various other business firms that no special analytical competence is necessary. And some transport people are not highly sensitive to differences between transportation and other economic activity. For example, a spokesman for the railroads told our task force that a railroad is "just like any other business." I want to put myself firmly on record that a railroad is not closely akin to other businesses. If anything, a railroad is unlike any other business; and the difference carries much meaning.

The heart of the matter is that transportation does not provide a final product. Transportation is a service activity. It is almost self effacing. It is to be measured not by its own performance and efficiency but in how, and how well, it contributes to the efficiency of those it serves--that is, the shippers whose products it carries away and the receivers whose essential goods it delivers.

In an advanced industrial economy that is so geographically scattered as ours, transportation vitally links the parts together. It bridges the islands of economic activity. In a different idiom, transportation can be called the lifeblood of an economy.

Or to use still other language, a carrier, as a trucking firm or railroad, may regard the performance of a certain carriage as optional. It may <u>not</u> be optional to the shipper, or even the community, whether that carriage be performed. It may be essential.

It follows that the essence of public policy for transportation is to try to bring as much harmony as possible between the interests of the private

carrier and the needs of the public including the businesses and communities, and even the nation, that are served.

Unfortunately, in many respects it is somewhat difficult to get an identity of interests between the carrier and the community. A case in point is the need for surplus or reserve capacity in carriage in order to meet the fluctuating and often unpredictable demands for transportation service. Railroads, understandably, want to keep all their rolling stock rolling at all times (except when detained for maintenance). Freight cars idled on sidings are a cost to the company. But there is no possible way to meet the needs for cars during peak load seasons without having seasons when some cars are not in use. At the Wichita hearing held by the task force, I asked a railroad spokesman how their operations were budgeted. Did they budget for 6 months of full use and 6 months of some idle capacity? The answer was that they budgeted for year-round full use. I replied that that was not possible. When the figure of 11 months was offered I retorted that he had better settle for 9.

To restate, to meet public needs for railroad transport there must be a cushion of reserve capacity and yet the railroads want virtually 100 percent utilization. This represents an inherent conflict of interest and one that must always be faced in making transportation policy.

It should be clear by now that there is always an element of public interest in freight transportation. Whether the federal government should involve itself in transporation facilities became one of the earliest major public issues in the new United States. Soon after the War of 1812 aggressive members of Congress from west of the Appalachian Mountains, often led by Henry Clay, pressed hard for "internal improvements." The decision was to build some of those "improvements" and ever since trans-

portation has been a part of national policy.

Furthermore, action has been taken without regard to philosophy or ideology, for the most part. Throughout our history, we have found a way to employ whatever combination of private and public resources seems to be appropriate and necessary in a given case. The principle has been essentially pragmatic.

Transportation policy is framed also by the exceptional nature of the cost structure. That cost structure in transportation is dominated by the enormous portion of overhead costs. Furthermore, the biggest element in overhead is not the cost of rolling stock but of the right-of-way. Whether that right-of-way be a railroad track, a highway, or a waterway, a great deal of cost goes into either constructing it or maintaining it or both. And once it is available, it can carry one or many vehicles per day. This basic feature of cost structure leads to two trenchant implications. The first is that strategic pricing becomes not only necessary but unavoidable. Wide choices are presented in rate making as to how the overhead is apportioned for rate making purposes. Strategic pricing is implicit irrespective of whether the process is regulated or not regulated. Some component of "value of service" or "what the traffic will bear" always enters into rate policy.

Some economists try to reduce the allocation of overhead to a fixed formula such as "fully allocated," and others have coined slogans such as "no cross subsidization." I have to go on record firmly as opposed to both. There is no possible way to reduce rate making in freight transport to simple formula. Nor can or should all cross subsidization be avoided. Every large business cross subsidizes to some extent; that is, it carries on certain activities that can hardly be declared profitable of themselves

but are important to the total operation. It has always been so in transportation and will continue so.

The other deep-set inference brings in the intermodal differences in financing of the right-of-way. The railroads were in a sense originally given their right-of-way, through the mechanism of land grants. However, they have since had to finance maintenance and reconstruction and currently it is fair to say that railroads are paying the cost of their right-of-way. But truck transporation uses the public highways and they pay their share only through a user charge. Water transport has been free even of user charge till very recently. The user charge principle is just now being applied to waterways for the first time, as is well known.

Our task force learned that shippers from coast to coast do not feel kindly toward railroad management. This is an understatement. Quite a few are harshly critical of railroad management. I am not planning to defend railroads, but I do say that their allegation of intermodal inequity in public policy is justified. The railroads have been particularly hurt by the interstate highway system which has diverted considerable freight from them. Furthermore, in my judgment, in many cases long distance heavy freight has been moved to highways that more properly and more economically belongs on rails.

As my role at this session is to define the nature of the problem, I turn now to what I regard as an unfortunate preoccupation with long distance shipment of grain to export market. This has been the most visible and in many respects most worrisome aspect of the rural transportation problem. Even so, I believe this selective emphasis misleads. First of all, there are many other important agricultural products that present transportation problems. Shipment of perishable fresh fruit across country is a good

example. Our task force learned that farmers of the northeast are as concerned for shipment of feedstuffs to them as grain farmers are about outmovement of their products. Fertilizer shipment is crucial in some areas.

Nevertheless, I choose for greater emphasis the whole collector function, which is more difficult in some respects and even more tricky to deal with than the mainline movement of grain across country to export.

The grain must be collected. It must be assembled in some fashion. Until fairly recently much of it was collected by means of rail branch lines. There still is an economy in getting that grain aboard freight cars as close to the farm as possible.

Railroads are complaining about the cost of performing the collector role. There is no doubt that many branch lines are outmoded and cannot be retained. Nevertheless, I want to make two points rather firmly. The first is that railroads' bringing the grain together from the country to their main track has always been a costly nuisance. The railroads perform that function not because they like to do it but because that was the way they got the grain together for their profitable movement to the final destination. It's analogous to my experience in getting lodging at motels. When I fly to a large city I don't take a taxi to a motel; I call the motel and ask to be picked up by its own conveyance. I pay nothing to the motel for the service. Motels send for their passengers not because that activity has any profit but because they thereby get enough guests to keep their motels almost full and money-making.

To repeat, I know, as does everyone, that many branch lines cannot be retained. I'm afraid, though, that we may be too quick to abandon and among the reasons I feel that way is that the increasing shortage and ever higher prices of energy will make rails more advantageous. Once a car

fleet of any size is assembled, rail transport is more energy efficient than highway. But the real problem in all this is that it requires a high coordination between federal, state, and various local institutions including shippers and carriers to arrive at really sound decisions about branch lines. Moreover, to complicate it more, branch line decisions are interconnected with highway maintenance decisions because the availability of a branch line can often affect the level of capacity that must be built into local highways.

As a quick side note regarding the collector function, our task force was told about the collector train principle whereby empty cars are dropped off on schedule and then picked up on schedule. This seems to offer promise and devices of this nature ought to be looked into further.

I have already mentioned the experience of our task force in hearing many protests about quality of rail management. It is of course easy to find targets of one's unhappiness and I cannot sit in Solomon-like judgment on the validity of the charges. Alongside allegations about rail management have been similar ones about union labor rules. Many people believe that work rules have been too inflexible and have added appreciably to costs in rail transport particularly.

My last comment that reflects the experience of the task force together with studies of basic issues relates to the phrase-making about regulation vs. deregulation. Our task force began its inquiry about the time that the Carter administration advanced its proposal to bring about almost total deregulation of railway freight transportation. For a time we addressed our assignment in terms of regulation/deregulation. I protested strongly that this is not a useful nexus. Of course, one reason for looking at the matter in those terms is that many railroad spokesmen had charged that their

troubles had been brought about primarily by the regulations imposed by the Interstate Commerce Commission. There is some irony in the sequence of events, whereby once the administration said, in effect, "OK, if regulation is causing the trouble we will get rid of regulation," whereupon the railroad replied that they didn't want that either.

Polar opposites of regulation or no regulation do not offer any help to the making of policy for railway transport.

I shift now to more personal judgments about the freight transportation situation.

First, I think we need a national dedication to resolving the very serious if not crucial transportation problems that we face. We have not had that dedication to date. It has not been forthcoming at either federal or state level. It is an essential starting point.

Secondly, policy issues in transportation are not essentially ideological and any attempt to make them so only frustrates.

Thirdly, I pick up my opening theme that transportation is a service function. Therefore we begin with the crucial place of transportation in the viability of businesses, communities, and even the national economy. I have quoted often a line which is found in the well known text written by Locklin, "The power to make freight rates is the power to turn a wilderness into a city or a city into a wilderness." Where farm products are concerned, it is also the power, by minor adjustments in rates for the raw vs. finished products, to determine where the processing is located.

And because availability of transportation is vital, the key principle in transport policy is that of the common carrier. This is the principle that sets forth the obligation for a carrier to provide service to a given community or business on a regular, scheduled basis irrespective of whether

its doing so is profitable according to the tests of profitability that are employed.

Let us admit it: there is a cost to applying the common carrier principle. There is a cost to railroads that are under a common carrier obligation and there is a cost to that portion of truck transport on highways that is regulated under common carrier rules.

That cost is borne by diversion of income from the more profitable portion of a carrier's total activity, or from subsidy, or from a combination.

When I teach my class I illustrate this principle in terms of city buses in Columbia. These of course provide passenger transport but the principle is the same. Each morning about 6:30 the buses begin to run. On their first circuit they have only a few passengers. I doubt the revenue does much more than pay the cost of the gasoline used. Why do the city authorities require that those buses run? They do so because it is necessary to deliver custodians to the University of Missouri and to downtown businesses in order to open up those places. About 7:30 the passenger load increases markedly, generating income that can cover much of the cost of the bus operation.

Even so, the city buses do not pay their way. They are subsidized by taxes. One reason for this picture is explained by busriders such as myself. On most days, I drive and do not take the bus. To complete the scenario, I own a home and pay a real estate tax. I paid it about 2 weeks ago. When I paid the tax I knew that some $5.00 or more went to paying the deficit for the bus system. I was delighted to make that contribution. I was delighted because it is important to me to know that each morning at 6:55 a bus comes by my corner. When I want to use the bus I want to do it badly. Availability is important to me. Yet the occasional coin I put in the coin box will not do much to keep the bus operable. In other words, it is important to me and to

thousands of other Columbia citizens to have a bus service available--much more important than the value of our annual payment of bus fares. Therefore, through our taxes we finance having the service available.

Such is the nature of transportation. The community needs it. Sometimes it can be made viable on a commercial basis but sometimes we must provide further financing.

Our task force regards the railroads as the backbone of rural transportation. I agree. I am more critical than my colleagues in my evaluation of the present railroad system. It is not even a system. In my judgement, the United States ties with Canada for having the worst railroad facilities in the western industrial world. We don't have a system; we have 76 short lines. There is not one single coast to coast railroad. At least, we should move quickly toward end-to-end mergers and we probably need other steps to get a better integrated railroad system for our country.

I have concluded that we probably must turn to a national freight car fleet. I am not dogmatic about this but I am increasingly persuaded. My idea would be to pool all private cars into one single fleet and let carriers draw on that fleet as they require. I would add about a 10 percent overrun financed by federal appropriations. This would be the reserve for peak load that is not in the interest of private carriers to provide. Among other reasons why I think a national car fleet to be necessary, the railroads have not been willing to keep enough cars of their own and have required a number of shippers to buy their own cars. But then when the railroad company has enough cars of its own it refuses to use the shippers' cars. This is an impossible and unfair relationship. Therefore, I would simply pool all cars into a single facility.

I think we need a lot of imaginative thinking about how to handle the collector problem. Perhaps we should attempt an REA-type cooperative in some instances, as has been proposed and in fact advocated.

I have given most of my attention to the railroads, which are the more serious problem. Nevertheless, we could be enjoying a false security about our highways. They are being under-maintained and are deteriorating fast. If we do not improve maintenance, within 20 years they will be in as bad shape as the worst railroad lines are now. The states have been unwilling to step up their gas tax rates very fast even as the cost of maintenance services keeps escalating.

Moreover, it is not possible to maintain all rural roads to high capacities. It is not conceivably possible to build all rural bridges to a capacity to take the heaviest semi-trailer. The wisest policy is for each state to develop a classification scheme for all its roads and highways, deciding in a rational and planned way which roads go into each of several categories of degree of maintenance.

But I end where I began. Because transportation is a service activity, the fundamental question really is not what kind of transportation system we want. The starting point, the first question, is what kind of rural economy, what kind of rural communities, we want. Then only secondarily do we address what kind of transportation service we feel to be in our common interest.

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